295.8
El 2

Member Associated Business Papers, Inc.

The Newspaper of the Industry

Member Audit Bureau of Circulations

AIR CONDITIONING AND REFRIGERATION News

Issued Every Monday at 450 W. Fort St., Detroit 26, Mich.

April 21. 1947

Vol. 50, No. 16, Serial No. 944

Established 1926.

LIBRARY RECEIVED APR 21 U.S. DEPARTMENT OF AGRICULTURE BELTSVILLE BRANCH

Entered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright, 1947, by Business News Publishing Co.

INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week
Henry Ford, Humorist
Sport's Note
Ed Wright, Benefactor
World War III News
Here's Another Worry for You

Story of the Week

Two suburban matrons were having a wonderful time dissecting the faults, flaws, and foibles of their best feminine friends.

"And as for Hortense," said one, "I'll never say anything about her unless it's something good. But, wow! Is this good. . . ."

Henry Ford, Humorist

Now that Henry Ford has passed on, solemn eulogies of his life and works are appearing everywhere. Many of these overlook the fact that he was a warmly human fellow, and that he had a grand sense of humor.

When his famous Model T began swarming all over the land, it was the butt of countless jokes. Gibes at the "Tin Lizzy" were told everywhere. Instead of taking affront at these gags, Ford had them collected and published. His "Tin Lizzy" jokebooks, far from hurting his business, helped continue its upward zoom.

Just two months ago, according to one of his associates, Mr. Ford was touring a portion of his mighty industrial establishment when he came upon a gigantic drafting room.

"What goes on here?" he asked.

"They're making the 1948 Ford car."

"With pencils?" he shot back, roguishly.

Mr. Ford's own favorite anecdote had to do with one of the vacation jaunts which he used to take with Harvey Firestone, Sr., the rubber manufacturer, and John Burroughs, the naturalist. Burroughs affected a long, white beard, which made him quite spectacular.

Arriving in a small western city late one night, the trio discovered that they were short of ready cash. They drove around until they found a Ford dealership which was still open. Ford introduced himself, and asked to borrow some money.

The dealer was mighty skeptical.

"How do I know you're Henry Ford?" he growled.

"Why, Harvey will identify me. This is Harvey Firestone."

"Oh, yeah?" The dealer turned to the bewhiskered Burroughs. "And if you tell me you're Santa Claus, grandpop, I'll have you all put in the hoosegow."

Another Ford-Firestone story concerns the time both were attending the annual Indianapolis 500-mile auto race. (Ford was a great fan, and seldom missed one of these Memorial Day classics.)

Right in front of their box a racer skidded and overturned. Miraculously, the driver was thrown clear and uninjured. Ford asked that he be brought to his box.

"What happened?" he asked the driver.

"One of those no-account Firestone tires blew on me," he answered, not realizing that Harvey Firestone was there, too.

Ford laughed and laughed and laughed. Firestone's face reddened. Next day he was back at the office, ordering his engineers to design a special racing tire. They did. Result: Practically all racing cars have been equipped with Firestones ever since.

Sport's Note

Charlie Bachman, famous coach of Michigan State football teams for

(Concluded on Page 6, Column 1)

Reconditioning Firm Takes Trade-Ins Off Dealers' Hands

NEW YORK CITY — Household mechanical refrigerator trade-ins may be a nightmare to some appliance dealers, but they are just plain good business for the Appliance Production Corp. here.

Typical of refrigerator reconditioning firms that are springing up around the country, APC buys traded-in refrigerators from appliance retailers on a wholesale basis and reconditions them for sale in areas where a market for used units is said to exist, particularly in the south and midwest.

Malcolm B. Hendelman, vice president of the firm, explained that APC started in business about a year ago reconditioning units from apartment houses where the owners had purchased new refrigerators.

Now it is buying used electric refrigerators from many points outside of as well as within the New York metropolitan area for reconditioning, he declared.

When a dealer accumulates enough boxes to warrant hiring a truck to pick them up, APC sends a vehicle for them, according to Mr. Hendelman.

The boxes are purchased from the dealer, or in some instances, reconditioned for the dealer on a fee basis, he asserted.

At the company's plant at 59 Crosby St., the refrigerators are taken in hand by 20 mechanics who do a complete reprocessing job on them. They check and, if necessary, replace every part and unit. Spare parts are kept at the plant for this purpose.

Open-type condensing units are fully reconditioned and repaired.

(Concluded on Page 4, Column 5)

G-E Appliance Sales Surpass '40 Quarter

SCHENECTADY, N. Y.—Sales of home appliances billed by the General Electric Co. during the first three months of 1947 surpassed by large percentages those billed for the first quarter of 1940, Charles E. Wilson, president, told company stockholders at their annual meeting last week.

Radio and television receivers show an increase of 300%, he declared. Home laundry equipment jumped 180%, electric water heaters 120%, and electric ranges 80%, he added.

"Only in refrigerators do we lack a few percentage points of equalling the prewar figure, directly due to the steel shortage," Mr. Wilson pointed out.

He saw continuing shortages of materials as among the "highly visible obstacles ahead." He noted that copper and steel "will be unavailable in the quantities we need during the next several months.

Buffalo Forge Co. Will Hold Line on Prices

BUFFALO—A firm price policy on all lines of air conditioning equipment, fans, blowers, power plant equipment, unit heaters, and pumps manufactured by Buffalo Forge Co. and its subsidiary, Buffalo Pumps, Inc., will take effect immediately, Edgar F. Wendt, president of the firm, announced recently.

Mr. Wendt declared: "After considerable deliberation we have decided that the best interests of the nation will be served by a return to normal pricing procedure.

"While we have no similar assurance that our costs of labor and purchased materials may not be subject to increase, it is our hope that spiralling of prices will not continue."

First Western Industry Show Opens April 25

LONG BEACH, Calif.—The first annual Western Refrigeration Industry Exposition and the first annual convention of the California Association of Refrigeration Service Engineers Society will be held concurrently here this week-end.

Registration for the convention will get under way at 10 a.m. Friday, April 25, at the Hilton hotel. A ribbon cutting ceremony will open the exposition at 7:30 p.m. on the same day at the Municipal Auditorium.

The exposition, based on the theme "Promotion of Products Through Education," will open at 1 p.m. Saturday and at 10:30 a.m. Sunday. It will close at 6:30 p.m. Sunday.

Admission to the show will be by badge only except on Sunday when the public will be invited, according to the show program.

The California Association of R.S.E.S., meeting in the Hilton hotel, plans to have Paul B. Reed, national

(Concluded on Page 24, Column 1)

$73 Cut Highlights New Amcoil Prices On Equipment

NEWARK, N. J.—The American Coils Co., in an effort to comply with President Truman's request to all manufacturers for lower prices to combat inflationary trends, has issued new revised price lists for both refrigeration and air conditioning equipment, as of April 15, reports T. W. Binder, president of the firm.

Prices have been reduced as much as $73 on one model, with other price reductions throughout the line.

H. A. Thibault, vice president in charge of sales, announces that these new price lists were immediately put into effect and have already been distributed throughout the trade.

R. W. Ayres Becomes Seeger Chief Engineer

ST. PAUL—John S. Holl, vice president and general manager of the St. Paul Division of Seeger Refrigerator Co., has announced the resignation of Walter Ellsworth as chief engineer and the appointment of Russell W. Ayres, formerly with the Coolerator Corp. at Duluth, as Mr. Ellsworth's successor.

15-Cent Increase Settles GM, UEW Wage Differences

DETROIT — Settlement of wage differences between General Motors Corp. and the United Electrical, Radio, and Machine Workers of America CIO, came late Sunday, April 13, with the granting of a 15-cent increase.

This wage boost, which covers 30,000 employes in four GM divisions including Frigidaire, makes provision for an 11½-cent hourly raise for all classifications. The remaining 3½ cents will be used as an adjustment for six paid holidays per year.

Unique feature of the agreement is that it sets wage rates in the various divisions for a year. Demands by the electrical workers' union for a health, welfare, and retirement program, however, were not met by GM and are subject to further "discussion and negotiation."

Under terms of the agreement, it will continue in effect indefinitely unless either party decides to terminate it on or after April 28, 1948.

Described by H. W. Anderson, GM vice president, and James J. Matles, director of the union, as the first major agreement that has been completed for a year's term in the electrical manufacturing industry, the 15-cent wage increase is effective as of April 13, if ratified by the union locals.

The UEW-CIO agreement with GM was made independently of the United Auto Workers union which is currently pressing GM for a 23½-cent increase.

Nance Is Hotpoint President; Reports On Expansion Plans

CHICAGO—James J. Nance has been elected president of Hotpoint Inc., succeeding Ray W. Turnbull, who has been named a commercial vice president of the General Electric Co.

Reporting on Hotpoint's expansion program, Mr. Nance said that a 38-acre site on Chicago's west side had been selected for the company's new electric range plant. This new plant, which is expected to be in operation by January, 1948, will boost production of ranges by Hotpoint to 12,000 units weekly.

Mr. Nance said that plans which would include factory expansion for water heaters, dishwashers, and other appliances in the company's complete kitchen and laundry lines would be announced later.

Rema Sets Plans OnMembership, '48 Exposition

Flannery New President; Policies on Show and Other Matters Outlined

CHICAGO—Reports on plans for the Fifth All-Industry Refrigeration & Air Conditioning Exposition, to be held Jan. 26-29, 1948, in the Cleveland Public Auditorium, and approval of a new basis of membership in the association, were two major items of business at the annual meeting of Refrigeration Equipment Manufacturers Association, held at the Edgewater Beach hotel here last week.

E. M. Flannery of the Bush Mfg. Co. is the new president of Rema, and H. F. Hildreth of the Refrigeration Specialties Div. of Westinghouse Electric Corp. was elected vice president. Other officers are R. H. Israel, Virginia Smelting Co., treasurer; and K. B. Thorndike, Detroit Lubricator Co., secretary.

Newly elected to the Rema board of directors are John Schlemmer, General Controls Co.; W. A. Siegfried, Superior Valve & Fittings Co.; G. M. Kingsland, Minneapolis-Honeywell Regulator Co.; and Mr. Hildreth. Other members of the board, who continue in office, are: G. E. Graff, Ranco, Inc.; Harry W. Jarrow, Jarrow Products; J. W. Krall, Tyler Fixture Corp.; W. H. Maxwell, Wolverine Tube Division; and H. C. Morrison, Curtis Refrigerating Machine Division.

J. A. Strachan, the Weatherhead Co., a member of the All-Industry Show Committee, presented the following information about the Fifth All-Industry Refrigeration and Air Conditioning Exposition.

Members of Rema are scheduled to complete their drawing for exhibition space at the Show this month. On May 1, according to present plans, non-members of Rema who exhibited in the 1946 Show will have an opportunity for drawing space. This will be kept open for an indefinite period. Following this, other companies who did not exhibit in 1946 will get a chance to draw for space.

Mr. Strachan said that the present trend on the part of Rema members entering bids for space was toward larger exhibits than they had in the previous show.

Special attention will be given to the housing of those who plan to attend the 1948 Show, the committee report declared. All hotel reservations will be handled through the Cleveland Convention Bureau. All reservations already made will be turned over to the Bureau for handling.

Sixty days prior to the Show, a representative of each of the participating associations (Rema, Rewa, R.S.E.S., N.A.R.C.) will meet with the Convention Bureau to consider the housing facilities and to take action on reservations already received.

Present plans call for Rema to headquarter at the Cleveland hotel; Rewa at the Statler; R.S.E.S. at the

(Concluded on Page 4, Column 2)

RSES Meets Next Jan.

CHICAGO—Refrigeration Service Engineers Society will hold its 10th annual meeting in Cleveland next January in conjunction with the Fifth All-Industry Exposition, RSES headquarters has just announced.

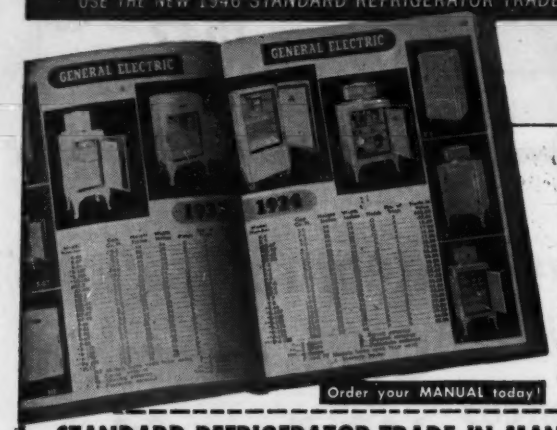
The meeting will be held Jan. 21 through Jan. 24, permitting members to attend the convention and have a day of relaxation before the opening of the All-Industry Show on Jan. 26.

New and Former President of Manufacturers' Group

E. M. Flannery (left) of the Bush Mfg. Co., newly elected president of Refrigeration Equipment Manufacturers Association, is congratulated by H. F. Spoehrer, Sporlan Valve Co., retiring president, following Mr. Flannery's election at the annual meeting of Rema last week in Chicago.

BE APPLIANCE-WISE!

USE THE NEW 1946 STANDARD REFRIGERATOR TRADE IN MANUAL & DEALER GUIDE



The Only COMPLETE REFERENCE on HOUSEHOLD REFRIGERATORS

Over 900 photographs—over 2900 detailed specifications and authoritative trade-in values given for all key refrigerator models manufactured since 1928.

Arranged and indexed for quick reference. All the appraisals shown are established by experts. Use the MANUAL to identify every refrigerator quickly and correctly.

Bookbound in durable green cloth. Pocket size (4¼" x 6¼")

STANDARD REFRIGERATOR TRADE-IN MANUAL CO. 503 WEST 43rd ST. NEW YORK 18, N. Y.

Please send me.....copies of the TRADE-IN MANUAL at $5.00 each.

NAME.....

STREET ADDRESS.....

CITY.....ZONE.....STATE.....

Check or Money Order Enclosed ☐ Send C.O.D. ☐

Taylor BEER CONTROL SYSTEMS

SAVE TIME, MONEY AND TROUBLE

Install these units for your customers and cut your service calls to a minimum. Buy the beer faucet of *perfect performance* direct from the manufacturer and increase the profits of both yourself and your client. Write for particulars now!

TAYLOR *Precision* MFG. CO.

1299 PARSONS COURT • CLEVELAND 16, OHIO

160-730-cu. ft. Frigid Freeze Walk-Ins Pushed By Macy Advertisement

NEW YORK CITY—A large advertisement appearing in a recent Sunday edition of the *New York Times* announced that R. H. Macy & Co., large department store here, is ready to take orders for Frigid Freeze walk-in frozen food cabinets in sizes ranging from 160 cu. ft. to upwards of 730 cu. ft.

The advertising copy, according to Macy officials, was directed primarily at farmers and owners of country estates, roadside inns, hotels, restaurants, clubs, frozen food stores, and institutions.

A 160-cu. ft. unit was set up on display in Macy's basement, store officials said.

The Frigid Freeze cabinets are manufactured by Refrigeration Corp. of America, a division of Noma Electric Corp., in prefabricated all-aluminum sections.

With the purchase of a unit, Macy's offered service, a guarantee for a full year, and free delivery and installation within a radius of 35 miles of New York City. Between 35 and 100 miles, a moderate additional charge would be made, Macy officials said.

Supreme-Air Handles Gemco

DETROIT—New distributor here for the Gemco "packaged" air conditioner is Supreme-Aire, Inc., 6534 Linwood Ave. announces the General Engineering & Mfg. Co., of St. Louis.

Whiting Corp. Provides 3-Yr. Failure Insurance For Home Freezers

CLEVELAND—A new insurance policy offering three years protection against food spoilage at a cost of $5 was announced recently to distributors of Whiting home freezers by Howard Roberts, Whiting sales manager.

The new policy, available at purchaser's option, protects against spoilage due to any mechanical failure of the Whiting home freezer, Mr. Roberts declared. He claimed that the policy has a substantially lower premium than any other similar contract ever offered to home freezer owners.

Speaking at the second annual national distributors' meeting, he also announced that engineering improvements had raised the capacity of the Whiting F-2000 unit from 11 cu. ft. to 12 cu. ft. at no addition in price.

Stevens H. Hammond, president of Whiting Corp. spoke briefly to the distributors, welcoming them to Cleveland. Walter Seiler, president of the Cramer-Krasselt Co., advertising representative, and Jerry Stolzoff of the same organization, outlined details of a newspaper campaign to be released in key Whiting markets.

Peters Heads NEMA Water Heater Group

DAYTON—F. H. Peters of Dayton, advertising manager of Frigidaire Division of General Motors Corp., has been appointed chairman of the Electric Water Heater Advertising and sales Promotion Committee of the National Electrical Manufacturers' Association. The Frigidaire advertising executive is also a member of NEMA's Electric Range Advertising and Sales Promotion committee.

Regal Industries Organizes

LOS ANGELES—Regal Industries has been incorporated in Los Angeles County, with 10,000 shares of no par value capital stock, to engage in a general appliances and accessories business. Directors are Nat Handel and Ben K. Brown, both of Los Angeles; and R. E. King, of Altadena, Cailf.

Cliff Dwellers Frosted Food Service May Go to 150 More Apt. Houses

CHICAGO—An expansion program to provide residents of 150 apartment houses with frozen food lockers and frozen food delivery service is planned by Cliff Dwellers Frosted Foods here, according to J. P. Gobberdiel, general manager.

So named because it caters especially to skyscraper tenants, Cliff Dwellers now has lockers with separate compartments in five apartment houses, averaging 50 or more apartments each. Monthly charges for locker rentals are $2 for the 3-cu. ft. size and $3 for the 5-cu. ft. size.

Each tenant is supplied with a key for his individual locker. Orders are placed by telephone or on postage-paid blanks which list available items and are delivered directly to the tenant's locker on a regular weekly schedule.

The company also delivers frozen foods to customers who have their own freezers, and it manufactures and sells locker units.

There is a long list of persons waiting to rent lockers, Mr. Gobberdiel said. He explained that a shortage of certain freezer parts prevents the company from serving them.

Westinghouse Div. Opens 2 New Offices In Texas

DALLAS, Tex.—To serve the southwest, the Sturtevant Division of Westinghouse Electric Corp. has recently established a district office in Dallas, and a branch office in Houston.

H. J. Waggle has been appointed southwestern district manager and will be located in the Dallas office and F. M. Mayse is the branch manager at the Houston office. The Dallas office will handle Sturtevant applications in Oklahoma, New Mexico, and the northern half of Texas. The Houston office will handle the southern half of Texas.

Both offices have a complete staff of application engineers and specialists in heating, ventilating, air conditioning, drying, dust and fume control, mechanical draft, and Precipitron apparatus.

When they **TRIP** *they* **GRIP**

When you specify a Grand Rapids Brass Company lock . . . no matter what the size or what the job . . . you provide the most dependable, most positive automatic trip lock available. And you reap the rewards of OUR superior design and engineering . . . in the form of lifelong customer satisfaction with YOUR product. You can always trust your good name to the performance of Grand Rapids Brass Company locks and hinges.

IT'S THE PRINCIPLE OF THE THING

Whether it's for a big walk-in cooler door or a small display cabinet, this exclusive locking principle combines smooth operation with cushioned, shockless endurance. When the trigger (a) trips on the strike, the locking jaw (b) takes hold like a bulldog . . . and never relaxes its grip. See our catalog for specifications, range of offsets, and alternative strikes.

by America's Quality Manufacturers of Commercial Refrigeration Hardware

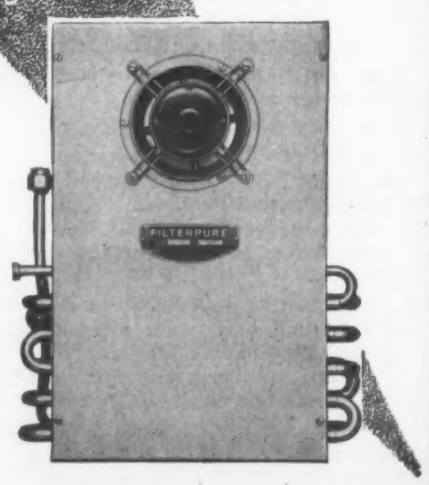
G*rand* R*apids* B*rass* C*ompany*

Makers of Dependable Refrigerator Hardware for over 40 Years

Grand Rapids 2, Michigan

Filterpure

FOR BACK BARS AND LIMITED SPACE APPLICATIONS



NOTHING LIKE IT ON THE MARKET!

EXTREMELY COMPACT **. . . Only 20" high, using a standard ⅝" tube 5-row deep coil.**

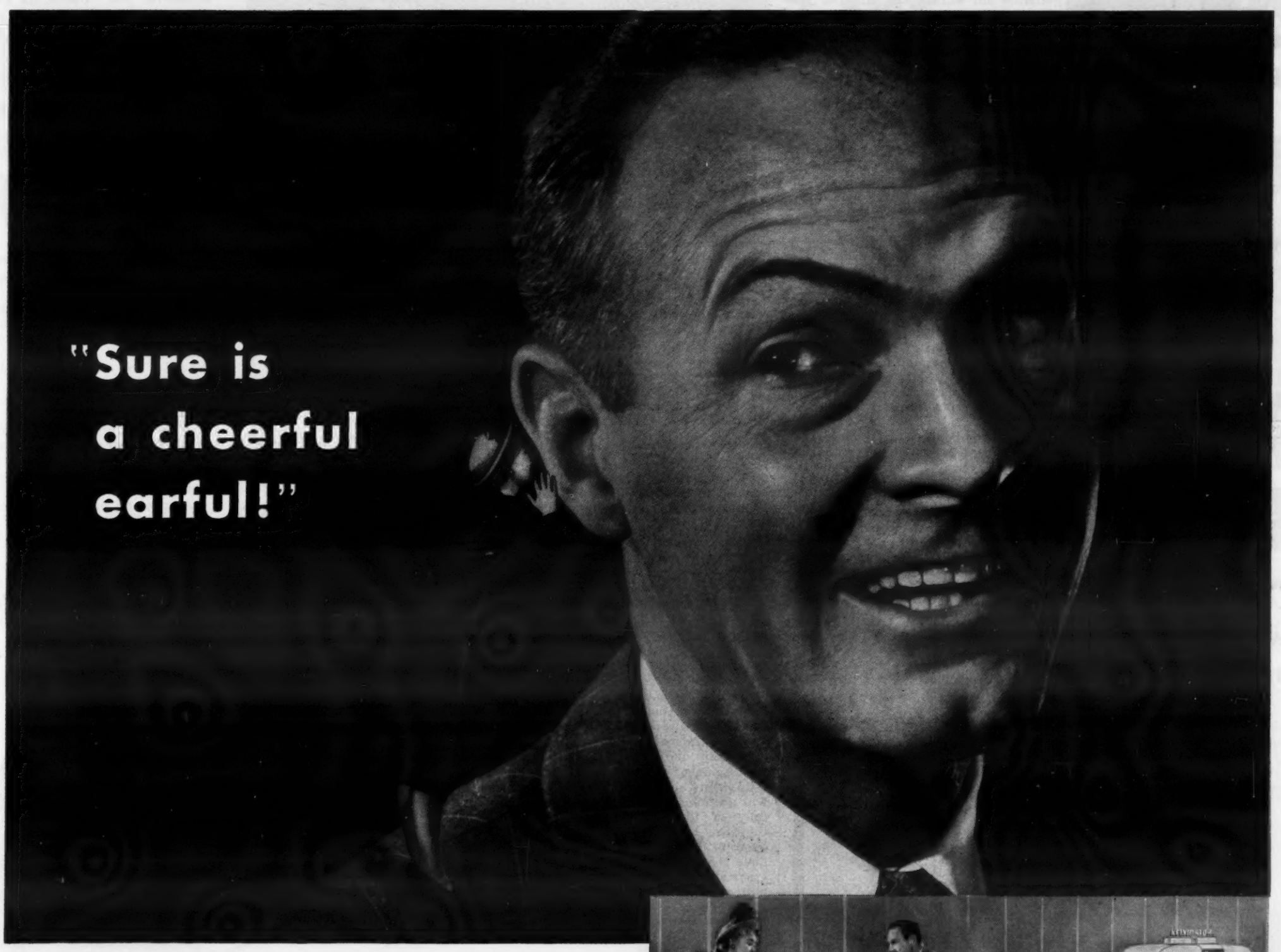
POSITIVE AIR CIRCULATION **. . . Centrifugal Blower guarantees proper air movement.**

MADE IN 2 SIZES **. . . To balance ¼ and ⅓ H.P. Compressors—Performance Plus!**

Sold by Leading Refrigeration Wholesalers

BETZ CORPORATION

HAMMOND, INDIANA



"Kelvinator has done it again . . .

"In all the years I've been in this business I've never heard as much talk from customers as I'm getting about that new Kelvinator 'Automatic Cook' Electric Range.

"I don't need to tell them—*they tell me* that it's the electric range everyone has been hoping to see. Completely automatic and *electric*-fast.

"But I'm not fooling myself about one thing. As modern as the 'Automatic Cook' is, it's the name behind it that's making the talk mean sales. Because people know that the name Kelvinator stands for soundness and dependability."

Dependability . . . all along the line . . . is Kelvinator's keynote. That's why the same care—the same "hidden values" go into the range as into the Kelvinator refrigerator. Again, you find a completely welded, all-steel construction for durability. The finish is porcelain *throughout*—the inside as well as outside of the range body! The oven insulation is *Fiberglas*. And for more accurate cooking . . . Kelvinator provides *seven* heat controls as against the usual five. Counter-balanced oven door, ball-bearing utility drawers, automatic oven floodlight . . . every detail —inside and out—bears the imprint of Kelvinator superior quality.

In *Retail-Minded* Kelvinator you truly have an appliance leader . . . for excellence of product is matched by aggressive merchandising activities, an outstanding example of which is the great Vocation-In-Sales Program. It provides the basis of a sound, comprehensive retailing operation through complete product and sales training for your men. And it builds an operation with a sound future!

You build a future with RETAIL-MINDED **Kelvinator**

THE MOST VALUABLE FRANCHISE IN THE APPLIANCE INDUSTRY

DIVISION OF NASH-KELVINATOR CORPORATION • DETROIT 32 • MICHIGAN

G-E Washer Sells for $299.75

NEW YORK CITY—Retail price of General Electric's new automatic washer will be $299.75, it was announced here recently.

A-S-E FROZ-N-FOOD LOCKERS

NEW PROFITS FOR YOU

Sell Froz-n-Food Lockers. They're the preferred lockers that assure you more profits. And, at the same time, bring customers complete satisfaction. Note their many special features, such as: glide-easy drawer action, long lasting steel construction, beautiful two-tone finish, drawer units shipped factory assembled — these and other features mean a quick selling line, a profitable line.

Write A-S-E for additional information.

ALL-STEEL EQUIPMENT, INC.
450 GRIFFITH AVENUE AURORA, ILL.

Rema Sets Plans--

(Concluded from Page 1, Column 5)

Hollenden; and N.A.R.C. at the Allerton.

Plans are also being made, said Mr. Strachan, for an All-Industry Banquet to be held at the Cleveland Auditorium during the time of the Exposition.

Introduced by the newly elected Vice President H. F. Hildreth, the following resolution regarding a new basis for accepting members into Rema was passed:

1. Companies will be asked to accept membership in Rema by invitation only.

2. To be considered for membership, a company must have had at least two years' experience in the refrigeration and air conditioning industry.

3. In an unusual circumstance, point two above could be waived if the company was passed on by a two-thirds majority of Rema directors.

H. F. Spoehrer of the Sporlan Valve Co., retiring president, in the President's address pointed out the place in the industry which the association has taken, and made it known that the group would strive mightily to hold the place it has made.

Some excerpts from Mr. Spoehrer's talk:

"Our membership has grown from 86 members to 103 members during the past year. Since there are so many new companies in the refrigeration industry, your Board of Directors felt it was advisable to restrict the membership to a greater extent than heretofore. We feel that we should grow slowly and soundly and should assimilate the new members as we go along.

"The Board, therefore, recommended to the membership a change in by-laws making membership in Rema by invitation only.

". . . A very important part of Rema's activity is to maintain friendly relations with other associations in the rerfigeration industry. We like to think of ourselves as the leading trade association in the industry. However, we are only one segment of the industry and there are many other segments without which we cannot function.

". . . Some of these other associations . . . maneuver to try to gain some selfish end either political or financial in nature. We have been extremely patient and cooperative with some of these associations, but I think in the long run such a policy will awaken these associations to the folly of their attitude towards us that this will eventually be for the good of the entire industry. I believe that in our dealings with these associations we should continue to be friendly and honest, but we should make no sacrifices to the detriment of Rema.

"Attempts are being made by outsiders to steal part or all of our All-Industry Refrigeration and Air Conditioning Show. We certainly have demonstrated our ability to give the industry an outstanding show from which service engineers, contractors, dealers, wholesalers, and manufacturers derive much benefit.

"In addition to enabling them to keep up with the latest developments in refrigeration products, they all benefit as much or more than Rema members through our unselfish policy of putting the profits of the show into our broad public relations program. We are the logical association to put on these shows, and we should continue these efforts with renewed determination.

". . . Our relations with Rewa have been extremely pleasant. Almost 80% of our members distribute products through wholesalers, and there is every reason why we should continue to work together for our mutual benefit.

"It is Rema's plan to resume the delightful joint meetings which we used to have with Rewa, where two or three days are devoted to a discussion of mutual problems and just plain 'visiting.' Because of the difficulty of obtaining suitable hotel accommodations the first such meeting will be held in September or October, 1948, preferably at a resort hotel.

"The Credit Committee is doing a wonderful job. Under its guidance Rema has periodically been publishing the paying guide, and we are building up a complete file of financial information about wholesalers, manufacturers, and large dealers and contractors. Also, the Credit Committee has provided monthly meetings for Credit Managers at which they exchange specific information about the current condition of firms to whom they sell."

New Officers and Directors of R.E.M.A.

Directors and officers of Refrigeration Equipment Manufacturers Association, pictured at the recent meeting. Seated, left to right: John Schlemmer, General Controls Co.; R. H. Israel, Virginia Smelting Co., (secretary); E. M. Flannery, Bush Mfg. Co. (president); H. F. Hildreth, Westinghouse Electric Corp. (vice president); K. B. Thorndike, Detroit Lubricator Co. Standing: H. C. Morrison, Curtis Refrigerating Machine Division; G. E. Graff, Ranco, Inc.; R. H. Luscombe, Penn Electric Switch Co.; H. F. Spoehrer, Sporlan Valve Co.; W. H. Maxwell, Wolverine Tube Division; J. W. Krall, Tyler Fixture Corp.; E. A. Vallee, Automatic Products Co.; G. M. Kingsland, Minneapolis-Honeywell Regulator Co.

Dealer Trade-Ins--

(Concluded from Page 1, Column 2)

Hermetically sealed units are given what repairs are possible.

The cabinet in its turn gets the old paint scraped off and a new coat sprayed on. Defective locks and hinges and all door gaskets are replaced. Shelves are replated. New meat holders and ice trays are installed, and the interior gets a good scrubbing.

When the process is completed, a label is placed on the refrigerator to show that it has been reconditioned by APC. The unit is then ready for resale.

At present, only electric refrigerators are being reconditioned by the company, according to Mr. Hendelman.

WHEN YOU RECHARGE

"Fill it and Forget it"

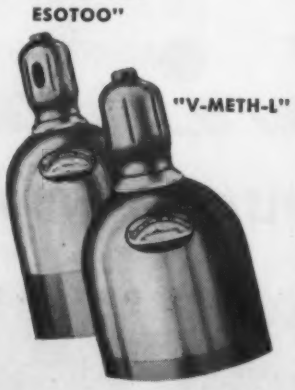
WITH A

Virginia Refrigerant

Why envy the camel? You, too, can "fill it and forget it" when you use Virginia Sulfur or Methyl for every recharge job. Why? Because Virginia Refrigerants are pure. The contents of each individual cylinder is tested and re-tested to maintain the high quality that has won Virginia an international reputation. VIRGINIA SMELTING COMPANY, West Norfolk, Va.

"EXTRA DRY ESOTOO"

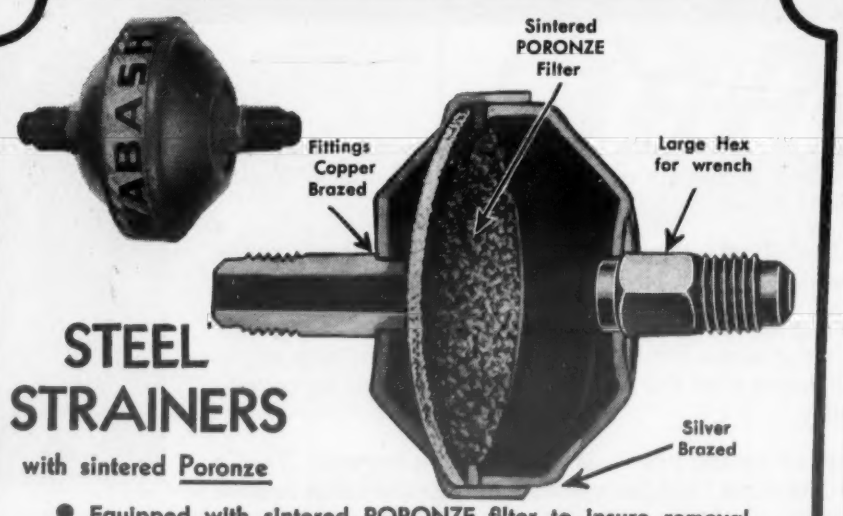
"V-METH-L"



Distributors for Kinetic's
"FREON" REFRIGERANTS

VIRGINIA Refrigerants

WEST NORFOLK • NEW YORK • BOSTON • DETROIT



STEEL STRAINERS with sintered Poronze

- Equipped with sintered PORONZE filter to insure removal of dirt, scale and sludge with a minimum pressure drop.
- All-steel construction with hydrogen brazed fittings assures clean, flux-free interior.

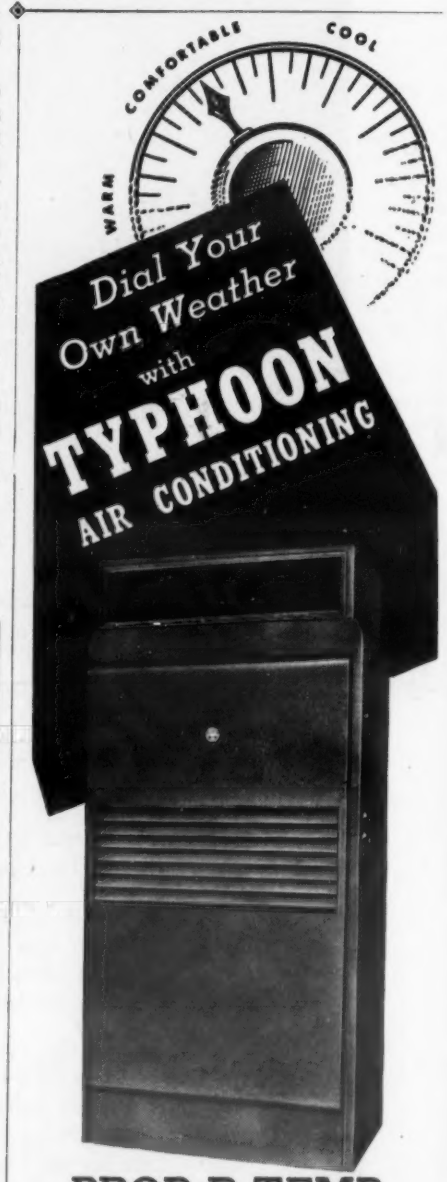
ORDER FROM YOUR LOCAL JOBBER

WABASH MANUFACTURING COMPANY
2642 S. Michigan Ave., Chicago 16, Ill.

Reliable
Dependable
Economical

These Service Extras are included when you buy from

CHASE REFRIGERATION SUPPLY COMPANY
546-48 West 119th St., Chicago 28, Illinois



PROP-R-TEMP

SELF-CONTAINED UNITS
3-Ton, 5-Ton, 7-Ton

PAY OFF WHEN THE GOING IS TOUGH

These rugged, oversized units are built to give service under the most trying conditions.

When the water supply is less than normal, the oversized condenser will still keep head pressures within bounds and the machine will keep plugging along, turning in a beautiful job of air conditioning.

The big cooling coil and every other oversized part gives assurance that this TYPHOON unit, year after year, will deliver 12,000 BTU's of actual air conditioning performance for every ton of rating.

This means a maximum of satisfaction for your customers and the very minimum of service headaches for you.

Write for further information and inquire if your dealer territory is still open.

Dept. 212
TYPHOON AIR CONDITIONING CO., INC.
Division of Ice Air Conditioning Co., Inc.
794 Union Street Brooklyn 15, N.Y.

HERE'S YOUR MARKET

Frozen foods display opens vast new field

SATURATION zero! Ceiling unlimited! Without exaggeration it can be said that the booming demand for quick-frozen food has opened up a new market that may be larger in unit sales and dollar volume than any other single market previously known in the refrigeration industry.

Every meat market and grocery store, and perhaps many other types of store, can and will sell frozen food through self-service display-type fixtures. This means that all your old customers are again prospects, and some sales will be made where no refrigeration has previously been used.

Research and development have now finally brought forth a number of fixture designs which fully meet the retailers' problems. These new fixtures have proved that they can and do attract trade and create sales. They pay their way!

Evaporator temperatures at –15°F. to –25°F. are required to insure results in open-top or glassed-in displays. This demands a condensing unit with exceptional volumetric efficiency to offset the high compression ratio . . . a unit that can operate under a vacuum without drawing air and moisture into the system . . . a compact unit for self-contained work.

Servel Supermetic has proved it answers these problems. It has no belts, no seals, no motor brushes. This eliminates 90 per cent of the mechanical troubles associated with ordinary units. Close tolerances and fine finish in manufacture assure high efficiency and high capacity. And Servel Supermetic is compact. A unit matching in performance the average prewar 1-HP unit fits into less than five cubic feet!

Sub-zero refrigeration is a *tough* job. You must perform —you must protect—you must preserve food twenty-four hours a day, seven days a week. Try a Servel Supermetic on your next frozen food display. You won't be disappointed.

Self-service frozen food case model PF8A by courtesy of Tyler Fixture Corporation, Niles, Michigan, nationally prominent in the manufacture of quality store fixtures since 1927. The Electric Refrigeration Division of Servel, Inc., manufactures condensing units only. These are available through prominent distributors and fixture manufacturers in all sections of the country.

Servel Supermetic model H2D is widely used on commercial frozen food cabinets. Available with "slide-out" rails instead of legs, for self-contained work on quantity orders.

Servel Inc.

ELECTRIC REFRIGERATION DIVISION, EVANSVILLE 20, INDIANA

This is Number Five in a series of advertisements featuring the markets available to the alert dealer in the commercial refrigeration industry. Ask for reprints for use in training your salesmen to take full advantage of all commercial refrigeration markets.

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)
many years, has left coaching to go into business.

He is now general manager of the Food Freezer Distributing Co. o. Lansing, Mich.

Ed Wright, Benefactor

Our good friend E. S. Wright of Youngstown, Ohio, in addition to his many activities as a refrigeration contractor and as an indefatigable worker for the good of the industry, recently founded a most worthwhile organization for the preservation of natural resources in the scenic State of Ohio.

Known as Tomorrow, Inc., the foundation was initiated and is directed by The League of Ohio Sportsmen, of which Mr. Wright is president. Among the well-known names appearing in the Advisory Council's roster are those of Louis Bromfield, famous author, and Roger Ferger, publisher of the *Cincinnati Inquirer*.

This organization is now telling its story through the medium of a beautifully colored motion picture which recounts the damage which has been inflicted against Ohio's natural resources, what is being done to alleviate the situation, and what every citizen can do to support the program.

The film will be sponsored by theaters, churches, schools, civic clubs, conservation groups, and agricultural organizations. Tomorrow, Inc. hopes that this movie will be witnessed by every man, woman, and child in the state.

World War III News

Pumps that may permit rocket speeds of 4,000 miles an hour are being "custom made" in Cleveland by the Pesco Products Division of Borg-Warner Corp.

The engineering staff of Pesco, which produced 80% of the fuel pumps for American aircraft during World War II, now is concentrating its efforts on the manufacture of pumps for all the rocket propulsion and ram-jet projects under way in this country.

Three special types of pumps have been developed. For turbo-jet missiles, Pesco has produced a "pressure-loaded" gear pump with a special feature that makes it operable on gasoline without any lubricant, thus permitting use at high pressure.

For the ram-jets, Pesco has turned out an ultra-high-speed centrifugal type pump permitting large flows under moderate pressure. It is specially designed for the pumping of liquid oxygen, hydrogen peroxide, and alcohol.

Many of these pumps are unusually large because so much fuel must be nozzled quickly to meet engineering specifications. These big jobs are made of stainless steel to counteract the corrosive effect of the fuels that are pumped.

Here's Another Worry For You

"The American steel industry, destined to be the greatest supplier of steel for the world market for many years, faces dire shortages of actual iron ore within a period too short to be comfortable," insists C. M. White, president of Republic Steel Corp.

"It is unlikely any great new deposits of high-grade ore will be uncovered in either the United States or Western Europe," he warns.

"The steel industry of the United States, supplemented to some extent by that of Great Britain, must be the main source of supply for the future needs of much of the democracies for many years to come. And the known supply of actual ore is being exhausted much more rapidly in the United States than it is in the rest of the world.

"Unless the American Steel industry, which is centered about the lower Great Lakes equips itself with plants capable of concentrating low-grade ores into material usable in its furnaces, it must resign itself to a declining steel production and elect to watch its present plants gradually become of secondary importance as they yield to expansion of plants elsewhere in this country.

"A migration to the Atlantic seaboard to utilize imported ores would effect vast changes of far-reaching consequence to the entire nation.

"Whether the decline in production from the commercial reserves of Lake Superior ore becomes material in five or ten years or not until later, the period is too short to permit a passive course," Mr. White asserted.

He defined potential ores as those which cannot compete with actual ores because they are too low in iron content, too high in undesirable constituents, or inaccessible to steel plants or markets by reason of cost or distance.

"The estimated world reserve of actual ores contains about 16.2 billion tons of metal," Mr. White continues. "The United States has 10.5%. In prewar years the United States was called upon for enough ore to make nearly 40% of the world's steel production. In contrast, other nations having perhaps 90% of the metal in actual world reserves normally make somewhat over 60% of the world's steel.

"Assuming that we may add actual ore reserves of South America, except half of those in Brazil, to actual ore reserves of North America the steel industry of the United States could supply its prewar rate of demand for about two-thirds as long a time as other actual reserves could supply the balance, but the geographical position of the American steel industry about the Great Lakes limits the economic use of these imported ores.

"We face an unprecedented demand for steel. Also, we face a future fraught with profound economic problems and difficulties. Our national debt has reached the unbelievable total of 259 billion dollars. In order to finance and reduce this debt our industrial production must be at a rate never before experienced during peace years. Because our industrial production is so largely based on iron and steel, our steel production must be at a high rate.

"A year will come all too soon when open pits will produce only 40 million tons, then 35 million tons, and progressively less," Mr. White forecast.

"We must install concentrating plants and use the magnetic taconite of the Mesabi Range and the magnetic ores of New York, New Jersey, and Pennsylvania. Methods for the concentration of low-grade hematite ores are being studied intensively, but to my knowledge practices have not yet been developed to a point where a commercially attractive finished product can be produced.

"Engineers and industrialists have a way of making great progress under the spur of necessity. Hence, there is every reason to believe that when the abundant low-grade iron ores become the principal sources on which the world must depend for its iron and steel supplies, engineering achievements will rapidly overcome the present handicaps to the utilization of these deposits."

Well, let us hope.

DOUBLE WIDTH

INLAND DESSERT TRAY

GIVES 3-WAY SERVICE

Inland Dessert Tray and Separator available as shown with: Handi-Cube Grids having pastel-tinted or transparent plastic partitions; Handi-Cube Grids with aluminum partitions; Tilt Out Grids and Shucker Grids. Pan Lifter is optional.

Talk about efficiency! The new double width Inland Dessert Tray serves 3 ways—in freezing ice cubes, in making desserts, in storing frozen foods.

1. Accommodating two grids, with the handy separator between, Inland's double width Dessert Tray freezes double the quantity of ice cubes. And the desired number of cubes can be secured without disturbing the whole trayful.

2. When grids are removed, the tray is converted into an ideal utensil for making all types of frozen desserts.

3. And of course, this versatile tray is grand for storing frozen foods such as meats, fish, fowl, game, vegetables and ice cream. So, remarkably efficient in 3 big ways, the Inland Dessert Tray has customer appeal aplenty—for easier, faster sales. For full particulars and prices write to—

INLAND MANUFACTURING DIVISION, *General Motors Corporation, Dayton, Ohio*

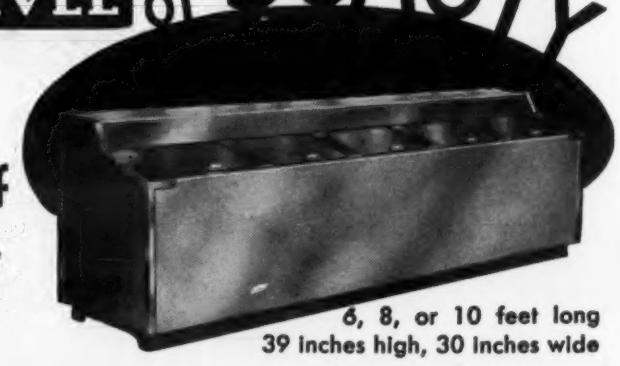
FAST FREEZING

QUICK RELEASING

ICE TRAYS BY INLAND MANUFACTURING

INLAND

MARVEL of BEAUTY



Marvel of Efficiency

6, 8, or 10 feet long
39 inches high, 30 inches wide

Dry Beverage Cooler

Beautiful stainless steel and polished aluminum outside with polished aluminum interior. Heavy duty fin-type coils, designed to give fast cooling and less frosting. Rugged construction, first quality materials throughout. Stainless steel lids slide away or lift out. 8-inch utility shelf. Removable dividers inside. Toe space under edges.

MARVEL Quick Freeze Storage Locker

INSULATION:
5 inches thick

CAPACITY:
12 cubic feet

SIZE:
72 inches long
30 inches wide
34 inches high

COMPRESSOR:
¼ Horsepower heavy duty motor

RANGE:
From 15° below zero to 3° above zero

De Luxe model shown is stainless steel throughout. Other models have stainless steel tops with baked on white enamel or polished aluminum sides. Smooth inside surface for easy brushing off of frost. Large lid—23 x 45. Toe space.

DEALERS WANTED

W. ALLEN ROGERS Industries

BOX 272-AC DEMOPOLIS, ALA.

WITH MORE THAN 50% OF COMMERCIAL REFRIGERATION INSTALLATIONS IN 1947 DEFINITELY SURE TO BE BOUGHT ON A TIME-PAYMENT BASIS, THE IMPORTANCE OF AN INDUSTRY FINANCING PLAN IS RECOGNIZED BY ALL CONCERNED. ALREADY, LEADING MEMBERS OF THE COMMERCIAL REFRIGERATION MANUFACTURERS ASSOCIATION, AND THEIR KEY DISTRIBUTORS HAVE ENDORSED AND ACCEPTED THE COMMERCIAL CREDIT PLAN. IT IS TO YOUR ADVANTAGE TO INVESTIGATE THE LIBERAL WHOLESALE TERMS AND THE MERCHANDISING-SLANTED RETAIL PLANS WORKED OUT FOR YOUR BENEFIT. TAKE TIME NOW TO GET THE INFORMATION. CALL OR WRITE YOUR NEAREST COMMERCIAL CREDIT OFFICE.

COMMERCIAL CREDIT CORPORATION

MORE THAN 300 OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

Enlarged Appliance Dept. Permits One-Floor Display

CHICAGO—So that shoppers may view every type of electrical appliance without going from one floor to another, Crown's Store, at 222 S. Wabash St. here, has enlarged the electrical appliance department and established it on the main floor, according to Edward J. Bertrand, recently appointed merchandise manager in charge of the store.

Bigger Anchor Offices Open Way for New Expansion Moves

PITTSBURGH—Anchor Distributing Co. here has expanded its office space to take in an entire floor of an adjoining building, according to an announcement by Harold W. Goldstein, president.

Although this expansion doubles the available office space, the company is considering an additional expansion for the near future, it was reported.

Dealer Sends His Salesmen Out To Ring Doorbells as 'Insurance Against Future'

VAN NUYS, Calif.—To make certain that outside appliance salesmen are well versed in future "doorbell ringing," Harcraft Appliances, Inc., new major appliance dealership here, has seven outside salesmen out eight hours daily now—making calls which Manager George Samson feels will be invaluable in the future.

Harcraft Appliances, Inc., is one of a string of appliance stores which will cover 11 western states in the future, according to Mr. Samson—being opened at the rate of two or three a month at present.

"Our theory is that we want good men who are already familiar with their selling districts," Mr. Samson said. "Therefore, each man has his separate district and is paid a straight commission on sales. While we have no major appliances to deliver, each man is selling vacuum sweepers, small appliances, and taking cash deposits on refrigerators, home freezers, washing machines, radios, etc., for future delivery.

"Commissions on major appliances will be paid as soon as the customer who has given a salesman a deposit receives the appliance—and in this way, each man is building up a big backlog of future commissions."

While allowing salesmen to prove their mettle in this way, Harcraft has allowed each salesman an excellent opportunity to earn his living expenses by permitting a high commission of $25 each on vacuum sweepers.

"We're also selling miniature apartment-sized washing machines, roasters, mixers, fans, and other small appliances," Mr. Samson said. "A man who gets out and digs now on these lines will have an opportunity to come back later with full-size refrigerators, and we point out to each man that there is thus a dual advantage to each sale he makes.

SURPLUS SALES:

Tubing In New York

NEW YORK CITY—Copper tinned tubing, 3,905 lbs. of copper soft tubing coils of ⅛ in. O.D., and 363 pieces of hard copper tubing are being offered for sale by the local office of the War Assets Administration here.

The sale closes April 24. Bid forms on these new materials can be obtained at the WAA Customer Service Center, 37 Broadway.

Trade Equipment In Boston

BOSTON—Government surplus refrigeration and air conditioning equipment is being offered in a sale closing April 23 by the local office of the War Assets Administration.

Advertised items include four 400 lb. McCray ice cooled refrigerators, one 6 ft. counter beverage cooler, ice walk-in refrigerators, ice water coolers, reach-in refrigerators, Kold-Hold machines, air conditioning units, ice boxes, and freezers.

You Prove Discourtesy, Missouri Dealer Will Hand You $25

WELLSTON, Mo.—If any shoppers in this suburb of St. Louis still feel disgruntled because of rude treatment during the war by indifferent clerks, they can't help knowing that one store at least, Major Auto Supply Co., is doing its best to overcome their attitude.

Over the cashier's window in the large hardware dealership is a big sign. "$25 Reward to Anyone Who Can Prove That They Were Not Given Courteous Service," the sign reads.

Back of the counter is another sign which tells buyers of appliances and other durable goods that "If We Don't Have It, We'll Get It." Similar signs appear on stock shelving throughout the various sections of the store.

Major Auto Supply backs up these messages with what it feels is the only way to combat lingering ill will: good service, complete lines of merchandise, and "going a little further." For example, the store makes every effort to find the merchandise the customer wants, will give special order service, and pick up merchandise at retail from other dealers. Clerks are instructed to emphasize courtesy whenever they have an opportunity.

This policy is being stressed because, in the opinion of Charles LaRico, who is head of the company, the "war attitude" of many persons has proven a definite factor in building for an excellent sales future.

"Customers in general have been rankled, irritated, and otherwise dissatisfied by the way salespeople in every type of retail establishment treated them," Mr. LaRico explained. "We, ourselves, have undergone instances of the type—largely because through the war we were forced to employ inexperienced, uncaring people who frankly weren't interested in whether their customers were served or not.

"Therefore, we are doing everything possible to undo such bad impressions today."

Here's How Frigidaire Inspection Protects High Quality Standards

Regular meetings of inspection division chiefs are held in the office of C. W. McMullen (center), Mgr. Inspection Department, to discuss recommendations to top management. Here, W. A. Hancock, Insp. Supt., Plant No. 1, emphasizes an inspection procedure.

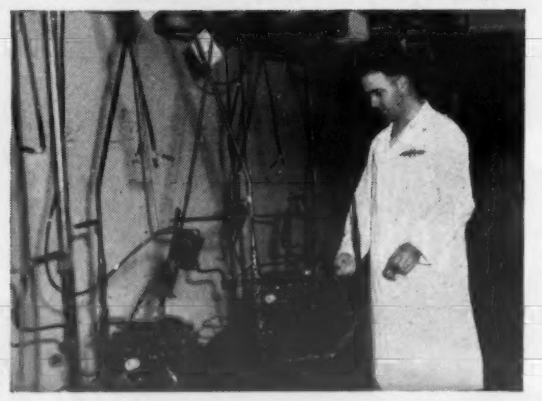
Depend on **FRIGIDAIRE** *to do things* **RIGHT!**

• Frigidaire's reputation for high quality and dependability has been built upon many things. Chief among them is this:

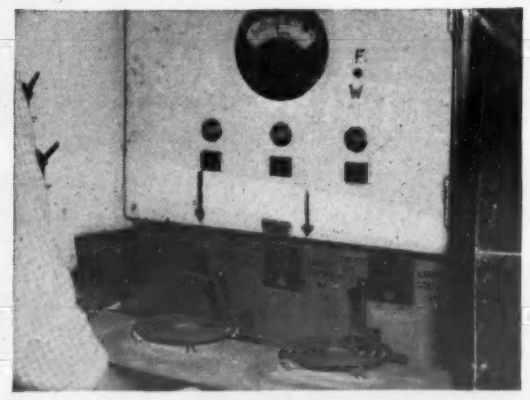
Every day highly-skilled Frigidaire experts check and double-check more than 45,000 operations. In addition, "in-the-home" types of operating tests are given to appliances picked at random from the assembly line—and no material, tool, gage, process or product is right until it is *proved* to be... and continues to prove itself every day!

This scientific control of quality is another reason why Frigidaire is so dependable, so long-lasting. And it's further proof that—today, as for more than a quarter-century, you can: *Depend on Frigidaire To Do Things Right!*

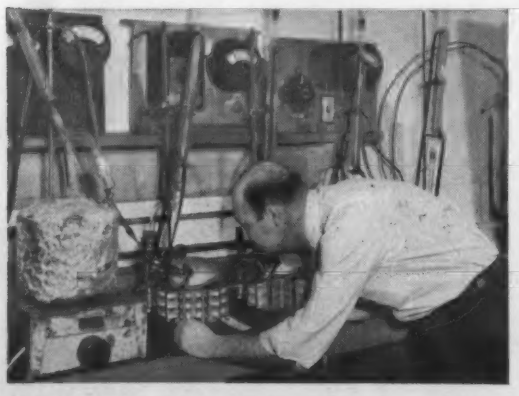
1. This instrument measures one-millionth of an inch. And with it, master gages and tools are checked. Even the temperature and humidity in this room are controlled to avoid the slightest contraction or expansion of measuring devices.



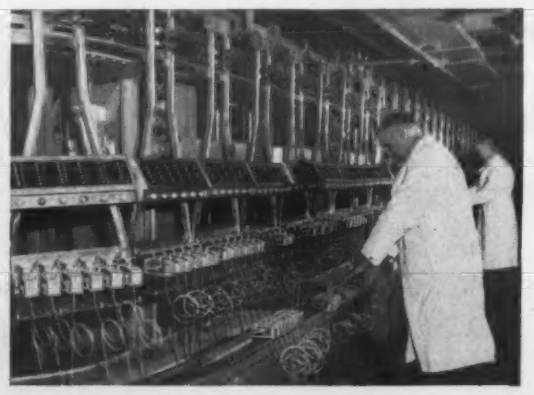
2. A "radio ear" is applied to finished mechanisms. This microphone applied to the Meter-Miser picks up the whisper of its running motor, which is amplified and reproduced through a speaker. Any deficiency is immediately detected.



3. Every Frigidaire Radiantube range unit is operated on all heats as it undergoes exacting efficiency tests. Periodic Life Tests show that Frigidaire Radiantube Units have a "life-expectancy" of 15 years of "in-the-home" use.



4. After dehydration in huge ovens, Meter-Miser mechanisms are again checked to see that moisture has been completely eliminated. Here, residual moisture as small as half a drop can be quickly detected and measured accurately.



5. Switches on Frigidaire refrigerators get operating tests on this traveling inspection. As they go around they are cycled automatically. Action is faithfully registered by lights and buttons, which tell an exact story of efficiency.

6. Final inspection before crating is done at the end of the assembly line. More than 1000 inspections are made on each Frigidaire up to this time, to make sure that each will carry on Frigidaire's reputation for dependability and lasting satisfaction.

You're twice as sure with two great names

FRIGIDAIRE made only by **GENERAL MOTORS**

Only COEY Cooling Towers bring you the high efficiency of

FLOATING FILM

Rogers' "COEY" Floating Film Cooling Towers apply a cooling principle widely endorsed by engineers and contractors; bring you high efficiency in cooling tower units:

HIGH CAPACITY - LOW WEIGHT
SILENT OPERATION
CONSERVESWATER-LITTLE SPRAY LOSS
ALL-METAL FIREPROOF CONSTRUCTION
EASY TO MAINTAIN

(No spray nozzles to clog; no baffles to replace)

Available in wide range of sizes. Models 20-R and 50-R (capacity range 30 to 175 tons) available for immediate shipment.

For full information including technical description, ratings, list of prominent users, write for Bulletin CT-A.

A product of

R. B. ROGERS COMPANIES, *Inc.*

1120 Leggett Avenue,
New York 59, New York

Exclusive Manufacturers of the Rogers T-Glycol System of Chemical Dehumidification

Dealer Sees Trade-In Rentals Absorbing Immediate Volume of Used Refrigerators

He'll Sell Rebuilt Boxes Through Separate Showroom

VAN NUYS, Calif.—At least one solution to the problem of large volumes of trade-ins in the immediate future lies in rentals, according to Warren Burgis, general manager of Sincomb Bros. here.

Sincomb Bros., claiming to be the largest appliance retailer in the San Fernando Valley, maintains a five-shop service department, which did an average of $30,000 in appliance repairs and overhauls through the war. "Leading light" of the service departments is the refrigerator section, which is geared up to handle 10 complete rebuilding jobs per week.

Assembly-line methods have been used for stripping, testing, and parts replacement for anything except "junky" boxes, and the main test line can accommodate 12 refrigerators simultaneously.

REBUILDING KEPT FIRM OPEN

"The ability to rebuild old refrigerators during the war is what kept us in business," Mr. Burgis said. "We repaired from three to four a week through the worst period of the war, and thus had something to sell. Now, however, we expect the service department to be far more important through clearing the way for trade-ins in the immediate future."

Experts at "cannibalizing" refrigerator parts, Sincomb Bros. now has a $3,500 stock of repair parts, which is expected to make this unnecessary. Complete facilities for everything but paint reconditioning are located in one 30 x 10 ft. space, which employs two expert mechanics who have been with Francis Sincomb, owner, for more than 10 years.

While, like other appliance dealers pressed for stock, Sincomb Bros. is evading trade-in at the present, the company has not closed its eyes to the fact that they are being offered.

WAITING FOR GOOD TRADE-INS

"As soon as good boxes are involved in trade-in allowances, we will fix them up, and either rent them out, or loan them out against future deliveries of new refrigerators," Mr. Burgis said.

"Van Nuys, as most California, is growing rapidly, and there are plenty of people who are searching desperately for new refrigerators. These people will be more than gratified to rent a refrigerator for $5 a month. By the same token, we want to tie up future business of prospective new-box owners, and loaning them a used box in the interim is the most effective loyalty-builder possible.

"Distributing our trade-ins on this basis, completely rebuilt and guaranteed, will carry a lot of the shop overhead—and most important, it will permit us to absorb a flat allowance loss on all 'junkies' which are beyond repair."

None of the executives of Sincomb Bros. expects anything but "junk" boxes to be offered as trade-ins for the next six months—therefore, complete rebuilding of refrigerators is out of the question.

"Now that money has begun to tighten up, families striving to buy a new refrigerator are deciding that the old box is not so bad after all," Mr. Burgis said. "Still others are holding off until prices drop. These two factors mean that top-quality refrigerators for repair and rental business are still a long distance off on the horizon."

SEPARATE SHOWROOM FOR SURPLUS

Naturally, there may come a time when rentals and loan-outs will not absorb the entire output of the refrigerator shop. For this purpose, Mr. Burgis is setting up a small separate showroom in the 70 x 150 ft. service department of the store which will be used entirely for trade-in refrigerators. Each box will be priced to allow the store to "break even" on the allowance, plus reconditioning cost—and showing them separately at the rear of the store will not detract anything from the appearance of the new appliance lines.

"Since we announced the plan we have had more requests for rentals than we could possibly handle," Mr. Burgis said. "It appears that rental income will be sufficient to keep the service department operating profitably if nothing else were being done."

Failure To Check Tank Pressure Costs Man An Arm

OAKLAND, Calif.—Failure to install pressure gauges on the compression tank he was testing cost an experienced refrigeration mechanic his right forearm here recently, according to findings of an official inquiry.

The 62-year-old veteran of the industry was severely injured by an explosion which occurred while he was checking a receiver tank. He "didn't take time" to put pressure gauges on the tanks or lines before releasing high pressure gas.

Safety officials pointed out that such a precaution is a fundamental safety measure. They emphasized that careless persons endanger others by their irresponsibility.

The injured man was working alone at the time and no fire followed the explosion leading to the official conclusion that the over-pressure gas exceeded the capacity of the tank.

New Southern Service Firm Covers 6 Louisiana Counties

ALEXANDRIA, La. — Wiseman Refrigeration Service has been opened at 418 DeSoto St. here. The new refrigeration service will serve the following parishes (counties) in Louisiana: Rapides, Grant, LaSalle, Avoyelles, Evangeline, and Natchitoches, as well as the city of Alexandria and the city of Oakdale. R. M. Wiseman is the owner.

190% Rise In Bendix Quarterly Sales Marks J. S. Sayre Re-election

SOUTH BEND, Ind. — Quarterly sales reached $17,269,393, a 190% increase over the $5,938,680 a year ago, stockholders of Bendix Home Appliances, Inc., were advised by Judson S. Sayre, president, at the annual meeting here April 8. Percentage of profit showed an improvement on this increased volume.

First quarter sales totaled 56% of the $30,836,262 reported for the year 1946. The March sales, $6,344,450 reached an all-time high for the manufacturer of the Bendix automatic washer.

Mr. Sayre and other officers were re-elected, as were all directors; H. J. Dowd, New York City, is chairman of the board. Other officers and directors are: Mr. Sayre, Mr. Dowd, E. R. Farny and Monroe Goldwater, New York City, and E. W. Ross, Detroit, directors; W. F. Oliver, A. R. Constantine, H. L. Spencer, vice presidents; W. J. Reuscher, vice president and treasurer; Joseph D. Sharpe, secretary; Oliver T. Cowan, assistant secretary.

Take your shelving and basket problems to Union Steel Products Co. You'll cut costs, save time, and trouble, save money . . . while adding to your product's sales-appeal.

You'll do this because Union Steel has the experience and facilities to give you shelves and baskets that are *right* . . . in the quantities needed to meet your production schedule . . . at prices that will lower your production costs.

Whether you want the life-time mirror-like beauty of Stainless Steel . . . or the economy, long life and high lustre of Plated Finish shelves or baskets, Union Steel can supply them to you.

Write today for detailed information.

UNION STEEL PRODUCTS CO.

531 Berrien Street • Albion, Michigan

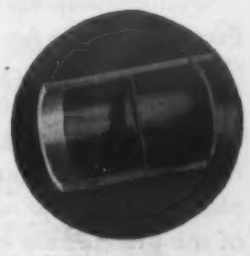
We do this in self-defense

... but see how it works to your advantage

For many years we've manufactured small diameter tubes of the highest accuracy commercially obtainable.

One of the reasons for this is the consistent use of the bore telescope on our redraw tube stock . . . for a *small* defect in a large tube would mean a *large* defect in a small tube.

Since a tube with an imperfect bore could not escape our final tests and inspection, it would be rejected and scrapped . . . hence, we have a mighty good reason for ferreting out any possible imperfection right at the start. It saves *both* of us time and money—and assures a superior product.

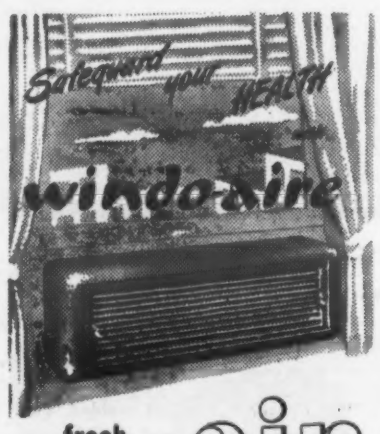


Precision-made tubes in Copper, Brass, Bronze and Copper-Nickel Alloys; in sizes from .015" O.D. to 1" O.D. with wall thickness down to .004"; round, square, or irregularly shaped; in coils, straight lengths or special forms. Bourdon tubes, thermal expansion bulbs. And, of course, Anaconda Dehydrated Copper Refrigeration Tubes with the famous Cup Seal*.

*Patent Applied For

THE AMERICAN BRASS COMPANY — FRENCH SMALL TUBE BRANCH
Subsidiary of Anaconda Copper Mining Company
General Offices: Waterbury 88, Connecticut
In Canada: ANACONDA AMERICAN BRASS LTD., *New Toronto, Ont.* 47412

ANACONDA *Anaconda Precision-Made Tubes*



fresh... pure... re-circulated.. filtered... air

- This power-driven ventilator gives clean, pure, filtered air . . . *all the time.*
- Equipped with 1/15 H.P. Holtzer-Cabot capacitor-run motor with speed control; Torrington twin-blower wheels and Owens-Corning Dustop filter.
- Handles 600 CFM fresh outside air or 250 CFM recirculated air. When desired, room air can be mixed with fresh outside air by means of the slide damper.
- Only 4 inches inside the room.

DEALERS: Write for Territories Still Available!

LANGTOT INCORPORATED
32 EAST 4th STREET • NEW YORK 3, N.Y.

★ The 24 hour Watchman

Tempgard

SUPER SLEUTH OF FOOD STORAGE

★ Flashes visible signal
★ Sounds audible alarm

Prevent food storage losses! When power fails TEMPGARD warns you. Sensitive Bi-metal Power Element activates visual and audio warning when Box temperature rises above 10°. Available with variable temperature adjustment. Easily installed. Representatives and Distributor inquiries invited.

WATCHMAN REFRIGERATION CORP.
483 MAIN STREET ★ GLEN ELLYN, ILLINOIS

California Weighs Locker Plant Bill

SACRAMENTO, Calif.—A bill licensing California locker operators and requiring each locker plant employe to have a health examination every six months has been approved in principle by the state senate committee on agriculture, it was reported here.

The licenses, to be issued by the state health service, would be granted as a matter of right unless there were reasons for denial, according to the bill. Fees for licenses would range from $15 to $30 per year.

Acme Representatives Attend 3-Day Conference

JACKSON, Mich.—The first general meeting of all Acme Industries, Inc. representatives since 1940 was held as a three day session in Jackson, Mich., April 10, 11, and 12.

Plans for new designs of products, distribution problems and general expansion to meet the increased demands of the industry were general topics of discussion.

Representatives attending included: W. E. Lloyd, Chicago; J. W. Snyder, Cincinnati; J. M. Craun, Cleveland; R. G. Dawley, Columbus; G. G. Schultz, Dayton; A. W. Barber, Des Moines; O. K. McCullough, Kansas City; R. F. McAndrews, Louisville; G. B. Filbert, New York; J. Barton Harry, Philadelphia; Glen Moore Comstock, Pittsburgh; H. C. Schmidt, Richmond; E. R. Magnus, St. Louis; A. Stuart Mitchell, Washington.

Special, Refrigerated 'Butter Pat' Drawers Speed Depot Restaurant Meal Service

KANSAS CITY, Mo.—A real time-saver which has been developed by the Fred Harvey Restaurant at the Kansas City railroad depot, is a series of refrigerated drawers spotted along the counter backbar which are to be used exclusively for butter pats.

Railroad travelers must be served fast at all times, and after a survey revealed that an extra trip for a pat of butter was absorbing most of the waste time with each order, it was determined to keep a supply of butter pats under refrigeration convenient to each 10 ft. of counter space.

While it might have been simpler to keep the butter pats in a dish of ice or in a bowl of ice water, the Harvey concern has found that diners are against this practice and the concurrent handling of the butter which must ensue.

Thus, each of three center islands within the oval counter at the Harvey food service institution is supplied with four drawer banks, each accommodating 72 pats of butter in neat shallow receptacles. During the slack morning hours, waitresses cut the butter with a wire cutter, and stack it neatly in three tiers in each drawer, each pat in a paper saucer.

It requires only half an hour's work by all waitresses to fill the drawers once for breakfast and again for the dinner rush, while 40° F. refrigeration supplied by coils in the drawer enclosure keeps the butter in perfect condition. It is only a few feet from any stool along the counter to the nearest butter drawer.

Delicatessen Boosts Sales Volume Six-Fold By Using Self-Service Commercial Refrigerators

ELMONTE, Calif.—Sales of delicatessen items in Crawford's Village Store on West Garvey Ave. here, have been increased from $500 a week to $3,000 a week in the space of 18 months, by placing all delicatessen service on a self-service basis, and featuring only "prepackaged foods," according to Louie Kiefer, manager.

The six self-serve commercial refrigerators used are divided into luncheon meats, fish, dairy items, cheese, cooked foods, and specialties. A crew of two girls, one woman cook, and two boys are kept busy at breakneck speed cutting, slicing, cooking, and wrapping foods ready to be purchased from the self-service commercial cases.

Among the innovations introduced are a beef stew dinner for two which retails at 90 cents, packages of 9 frankfurters which retail at 50 cents, and cheesecake wedges. One refrigerated case sells 60 lbs. of potato salad, 48 lbs. of jello, and 36 lbs. of cold slaw per day, all prepackaged and labeled with the market name.

$16,500 Frozen Food Locker Plant Approved In Indiana

EVANSVILLE, Ind.—Approval for the construction of a frozen food locker plant here at a cost of $16,500 was granted to Vanderbrough Cooperative Food Locker, Inc. by the Civilian Production Administration recently.

This non-housing construction project has been approved because it would provide increased food preservation facilities, the government agency said.

Kolaire Refrigeration Corp. Offers Service, Parts Supplies

WAUKESHA, Wis.—Kolaire Refrigeration Corp. has been incorporated at Waukesha, Wis., with a capital stock of 150 shares at $50 per share par value. Incorporators are Howard J. and Ruth Rathbun and Glenn D. Chapman.

The business of the new company will consist of installing and servicing air conditioning units, refrigeration and heating systems, and to deal in parts and supplies.

Wall WIRE PRODUCTS COMPANY
PLYMOUTH • MICHIGAN
Makers of
REFRIGERATOR SHELVES • STAMPINGS
FORMED AND WELDED PRODUCTS

Nothing equals the thrill and pride of ownership that comes with possession of a refrigerator equipped with Stainless Steel Shelves.

A Sign with a Profit Future

Here's a sure-fire sales talk that does its own selling . . . selling that means stepped-up profits for you. This is it:

Westinghouse has introduced the Five-Year Protection Plan for its entire line of Water Coolers. Now you can tell your prospects that if anything happens to the Hermetically-Sealed Refrigeration System within five years, it is replaced at no cost to them. After that, if a replacement is required, it costs but a fraction of the price of the complete cooler.

SELL THIS BIG MONEYSAVING FEATURE

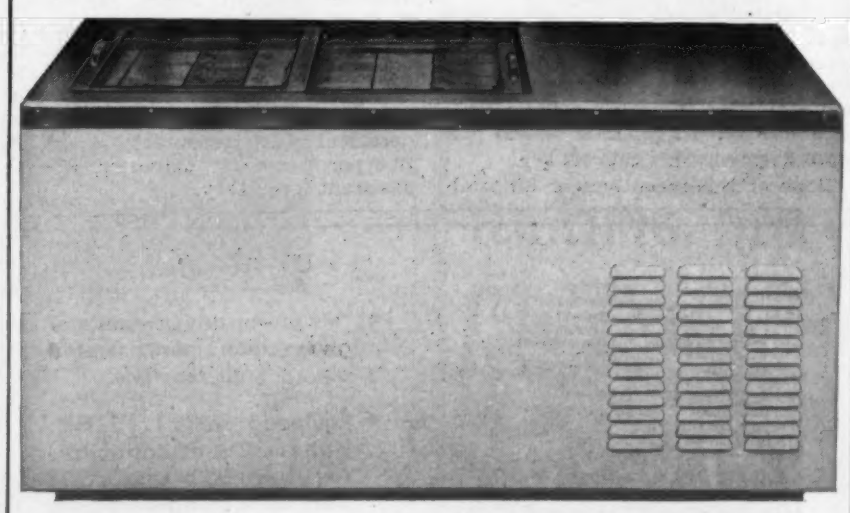
• Standard One-Year Warranty on the Complete Water Cooler.
• Additional 4 Years' FREE REPLACEMENT of the Hermetically-Sealed Mechanism. During these four years, if for any reason the Hermetically-Sealed Refrigeration System should fail, Westinghouse replaces it at no cost to you. The Westinghouse design principle makes this possible.

For details about the availability of Water Coolers, write to Westinghouse. The distributor *in your territory* will call directly on you to present complete franchise information.

Westinghouse Water Coolers
WITH THE 5-YEAR PROTECTION PLAN

Plants in 25 Cities . . . Offices Everywhere
WESTINGHOUSE ELECTRIC CORPORATION • APPLIANCE DIVISION • SPRINGFIELD 2, MASS.

Here it is!
The SENSATION of 1947



Model 510 A

Check these Features!

• 2 THERMOPANE SLIDING GLASS DOORS
• POLISHED STAINLESS STEEL TOP
• BUILT-IN 4 WALL REFRIGERATION
• ALL WELDED HEAVY GAUGE STEEL CONSTRUCTION
• HYDROLEENED FOR VAPOR SEAL

This 10 cubic foot all welded steel self service frozen food display cabinet is designed to meet the needs of the average store.

This self-contained, smartly styled, and superbly built cabinet eliminates the problems of:

Lack of space
Fear of overstocking
Fear of investing too much

FLEISCHMAN FREEZER CO., Inc.
275 East 140th St., Bronx 51, N. Y.

Supermarket Sells 100 lbs. More Fresh Meat Hourly With Pre-Packaged Display

KANSAS CITY, Mo.—Utilizing an open-type refrigerated case to merchandise meat on a self-service basis, Milgram's Supermarket at 32nd and Troost here, has succeeded in increasing its fresh meat sales to an average of 100 pounds per hour more than its usual standard daily volume.

Milgram's was just getting started with its practice of pre-packaging fresh meats for self-service, when supplies of meat and materials used for packaging were cut off due to the war, thus bringing to a standstill any plans the store had for this type of merchandising. However, the moment the war was over, the store immediately began to take up where it left off.

Beginning with sliced luncheon meats, which were pre-packaged in cellophane and placed in the case in quarter pounds, half pounds, one pound, and larger packages, labeled to show weight and price, the store tested the practicability of merchandising meat on this basis. The experiment was so successful that the store determined to go still further by adding like facilities to fresh meat merchandising on the opposite side of the department.

The self-service meat case, under the new plan, is handled as an addition to the regular meat department to the left. The eight butchers in the department cut, prepare, and package steaks, pork chops, veal chops, roast, pork loin, hamburger, bacon, and other meats during periods when business is slack. One girl assists the butchers in packaging the meats, and gives customers such personal service as may be desired.

"Only first-grade, high-quality meats are placed in the refrigerated case," Paul Dexter, meat market manager, indicated, "because we are aware of the fact that the appearance of self-service meats has a great deal to do with the swiftness with which it moves. Our meats seldom stay in the case longer than two hours, and by making use of all slack periods during the day to perform the packaging operations, our butchers and 'packaging girl' are able to keep the case stocked with bright, red meats having the most sales appeal."

Selling meat on a self-service basis has solved one serious problem for Milgram's, brought about by the regulations of the Kansas City's Butchers' Union. Under these, all butchers cannot work later than 6 p.m., and the meat market must be closed.

Now, the staff begins at 4 p.m. in the afternoon to prepare enough pre-packaged meats to be placed in the self-service case for the convenience of later shoppers. These customers now find an excellent selection of meats on hand with the result that sales from 6 until 9 p.m. closing time are often larger than those made during the regular shopping day.

Simple packaging operations include a wooden block table, an 18-in. roll of cellophane, waxed cardboard inserts, waterproof and bloodproof waxed price labels, and a simple hand sealing iron. The table is placed at the rear of the meat market, near the self-service case. Here, the meats, after being cut and weighed, are placed in a cardboard tray of proper proportions, labeled, then wrapped tightly in cellophane and sealed.

The cellophane used for this purpose is of a new type which prevents discoloration such as formerly used to occur when cellophane came in contact with meat. The label is placed beneath the cellophane so that it will not be displaced or become loosened from the package, and shows the per-pound price, the weight, and the total price.

The Milgram Supermarket includes the packaging charge in the price of each package of meat to cover packaging materials cost, labor cost, etc. The store has set up a fair amount to cover the operation which is passed along to the customer.

For small meats such as Swiss steaks, loin chops, etc., there is a charge of 2 cents added, average steaks, 3 cents, large steaks, 4 cents, porkchops, 3 cents, ham from 5 cents to 8 cents depending on size and chuck roast from 4 cents to 7 cents. Even though the customer can clearly see that there is a charge added on for packaging by simply comparing prices, the store has not received one complaint on this score. This is laid to the fact that the housewife will pay a few cents extra for convenience and eye-appealing appearance.

WORKS MANAGER

Large and rapidly expanding nationally-known Freezer manufacturer located northern New Jersey offers exceptional opportunity for Works Manager.

Must be aggressive, enterprising, between the approximate ages of 38 to 48, have strong experience in straight line mass production in sheet metal and assembly work, have been Works Manager or top executive for large company. Refrigeration background helpful, but not requisite. This position offers opportunity for broad and intensive responsibilities and progress. Salary open.

Submit Outline of Experience in strictest confidence. Box ACR, 1335, Equity, 113 W. 42 St. NY 18.

FOR SALE

Store Fixture Business

Due to failing health and age, I will sell 100% of the common stock of the Morton Show Case Co. of Dayton, Ohio. We sold during 1946, $1,285,191.24. We own one of the finest fixtures stores in the world here in Dayton with 50,000 square feet of floor space. Our Lima, Ohio store comprises 30,000 square feet of floor space. Our inventory in Lima is a little over $100,000 and in Dayton, slightly more than $200,000. Our stock consists of store fixtures of all kinds such as refrigerators, compressors, freezers, walkin coolers, bars, counters, stools, chairs and every piece of equipment that it takes to make a nationally famous fixture house. On the top floor of our building, we have a complete cabinet shop where we manufacture our own front and back bars and counters. This business can net one quarter million dollars profit per year. We will sell our Lima store for $150,000 and our Dayton store for $350,000. Our physical assets is just about what we are asking for this business. A live wire executive can floor plan this merchandise and take over the finest sales organization in the United States. Address: George Sanders, President, Morton Show Case Co., Residence Private Office, 1550 Bryn Mawr Drive, Dayton 6, Ohio.

TREMENDOUS DEMAND!

THE SENSATIONAL, NEW

FREEZRLARM

PROTECTS FROZEN FOODS

The exclusive, self-contained warning system . . . sounds an alarm whenever temperature rises above danger zone FROM ANY CAUSE. Not connected in any way with electrical system! Every freezer owner and locker plant needs one. Liberal dealer discounts, literature available.

CASH IN ON THE BIG SALES AND PROFITS

NATIONALLY ADVERTISED

WRITE FOR OUR DEALER PROPOSITION

FREEZRLARM COMPANY

832 S. LUDLOW ST. DAYTON 2, OHIO

25 cu.ft. Stainless Steel REACH-IN Refrigerator

Stainless Steel Inside and Out

Fully Welded Steel Construction

30 sq. ft. Usable Shelf Area

Forced Convection Cooling System

Factory Balanced Refrigeration

After years of enforced restrictions, Koch is coming back into full production again. Throughout these years, Koch has been enlarging, increasing facilities, and planning. Now, here is the result: the first completely post-war refrigerator, a 25 cu. ft. model of stainless steel, fully welded, with not a stick of wood used. These soon will be shipping in carloads to Koch distributors all over the world. In keeping with Koch traditions of quality and craftsmanship, every one will be a perfect refrigerator.

KOCH Refrigerators

North Kansas City 16, Mo. Since 1883

They'll Do It Every Time . . . . By Jimmy Hatlo

HELLO-TICKERTON? THIS IS VERMIN. HOW'S THE MARKET THIS A.M.?--HMM-MH--JUST AS I THOUGHT. I BEEN WATCHING THEM BABIES. WELL, SELL FLATWHEEL TRACTION WHEN SHE HITS 49¾ AND BUY ME CHICAGO AND ALABAMA AT 36- YAS-YAS-CALL YOU LATER.
IN A LOUD VOICE
QUIET, YOKELS! THE WIZARD OF WALL ST. IS ABOUT TO ROCK THE MARKET WITH THOSE FOUR 2-DOLLAR SHARES OF HIS.
BEARS OR BULLS, BULLS OR BEARS, IT'S ALWAYS JUST PLAIN BULL WITH VERMIN.
HE'LL SOON BE DOING BUSINESS ON THE CURB---WITH A TIN CUP. LOOK WHO JUST OPENED THE DOOR.
I'D SLEEP BETTER IF HE'D PAY ME THAT FOUR BITS HE OWES ME, BEFORE HE GETS THE BOUNCE.
JIMMY HATLO
GIVE 'EM TWO SHARES IN A PEANUT STAND AND THEY THINK THEY'RE INTERNATIONAL OPERATORS.
Thanx To W. O'NEIL, JR., STANDARD OIL CO., WHITING, IND.
COPR 1947, KING FEATURES SYNDICATE, Inc., WORLD RIGHTS RESERVED
1-30

Out With Special Privileges - - Revise the Wagner Act!

UNION PACIFIC TREASURE MAP OF INDUSTRY

Oregon*

EXTENSIVE FOREIGN TRADE
FINE TRANSPORTATION
ECONOMICAL POWER
GREAT SALMON FISHERIES
AGRICULTURAL WEALTH
WORLD FAMOUS WOOLEN GOODS
ROOM TO EXPAND
LEADER IN LUMBER PRODUCTION
SCENIC BEAUTY

*One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad.

Industry re-discovered Oregon during the war. It found opportunities capable of providing a livelihood for 10 times the state's present population.

Topographical, soil and climatic features make possible a variety of agricultural pursuits. The state has one-fourth of the country's standing saw timber. Salmon fisheries and woolen goods are world-famous. Portland's roomy harbor is a flourishing gateway of foreign commerce.

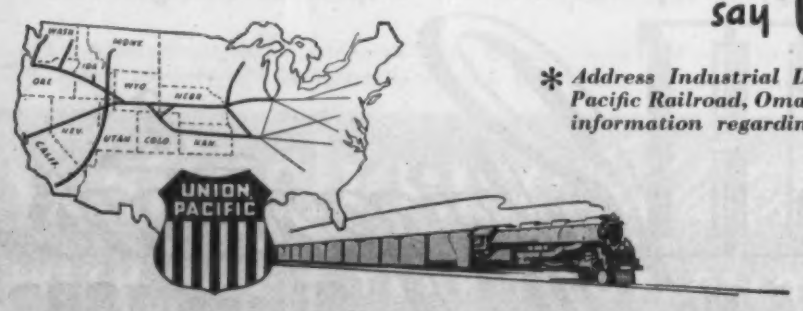
Huge Bonneville Dam assures ample and economical power. Oregon is noted for low electric rates.

Union Pacific provides Oregon with excellent transportation. Gigantic locomotives haul the state's products eastward over the "strategic middle route." And—just recently—Union Pacific inaugurated daily Streamliner service on the "City of Portland" between Portland and Chicago; the first railroad to provide such service.

For assistance in selecting industrial sites in Oregon, and for unsurpassed rail transportation, just . . .

be Specific - say "Union Pacific"

*Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.



UNION PACIFIC RAILROAD
THE STRATEGIC MIDDLE ROUTE

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark registered U. S. Patent Office; Est. 1926

AIR CONDITIONING AND REFRIGERATION News

Copyright 1947, Business News Publishing Co.

F. M. COCKRELL, *Founder*

Published Every Monday by BUSINESS NEWS PUBLISHING CO.
450 W. Fort St., Detroit 26, Mich. Telephone Randolph 0924.

Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $4.00 per year; 2 years for $7.00. All other foreign countries: $6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

GEORGE F. TAUBENECK
Editor and Publisher

PHIL B. REDEKER, *Editorial Director*

C. DALE MERICLE, *Associate Editor*
JOHN SWEET, *Assistant Editor*
ROY DENIAL, *Assistant Editor*
HUGH MAHAR, *Assistant Editor*
GEORGE HANNING, *Assistant Editor*
Editorial Assistants: FRANCES WEED, MARCELLA PRICE, LORRAINE MAJOR, MARGARET DEAN, MARGARET DITTO.

E. L. HENDERSON, *Business Manager*
ELIZABETH SMITH, *Assistant Bus. Mgr.*
MACIL STEPHENS, *Asst. Adv. Mgr.*
ROBERT M. PRICE, *Adv. Representative*
ALLEN SCHILDHAMMER, *Adv. Rep.*
YVAUGHN CRYSLER, *Subscription Mgr.*
WALTER J. SCHULER, *Production Mgr.*
ROBERT P. NIXON, *Credit Manager*

Member, Audit Bureau of Circulations. Member, Associated Business Papers.

VOLUME 50, NO. 16, SERIAL NO. 944, APRIL 21, 1947

American Enterprise Thrives On NEW Developments

DURING the last couple of years we've heard a lot about how badly America's selling organizations have deteriorated. Because nearly everything a manufacturer could make has been grabbed avidly by a hungry public, the function of selling and merchandising has gone into a decline. It just hasn't been needed.

Furthermore, during the years of World War II and subsequently, the normal influx of new blood into the selling and merchandising profession hasn't taken place. There was no need for it, no room for it, and no bright young men available.

Thus it is that far-seeing sales executives are mourning over a "lost generation," and wondering how in tunket they can overcome this handicap. The time will come (and soon) they predict, when customers will have to be *sold*. But who will sell them? How and where are the nation's sales managers going to recruit and train the army of sales-minded firms and men they'll need to do the job?

These are valid questions; and because there's no good answer for them yet, corporate officials *should* be worried (as they are). The future of their business enterprises, the future of America's economy, and the future of international relations are all involved in this dilemma.

But there's another problem which may be equally important. It stems from the same deadening situation (overwhelming demand for insufficient production). And it has been generally overlooked or ignored.

That problem is: There's a current dearth of new engineering developments and bright young engineers, designers, and inventors.

During the war, engineering and designing brains concentrated on lethal weapons. These creative talents haven't been reconverted yet. Like the vanished tribe of specialty salesmen, they haven't been needed. So they are withering away on the vine.

Nobody can blame a manufacturer for sticking to old designs. The demand for prewar items is so enormous, and the pressure for increased production so harassing, that the adoption of a new engineering principle or the introduction of a new product would merely add to his woes and headaches.

He has enough trouble as it is.

Furthermore, the continued use of prewar tools and dies over a much-longer-than-normal period effects decided savings in his costs. So long as people are clamoring to buy prewar models, and so long as militant labor unions are still gunning for more dough, why should he take a chance on something new?

If you were in his position, you'd probably make the same decision.

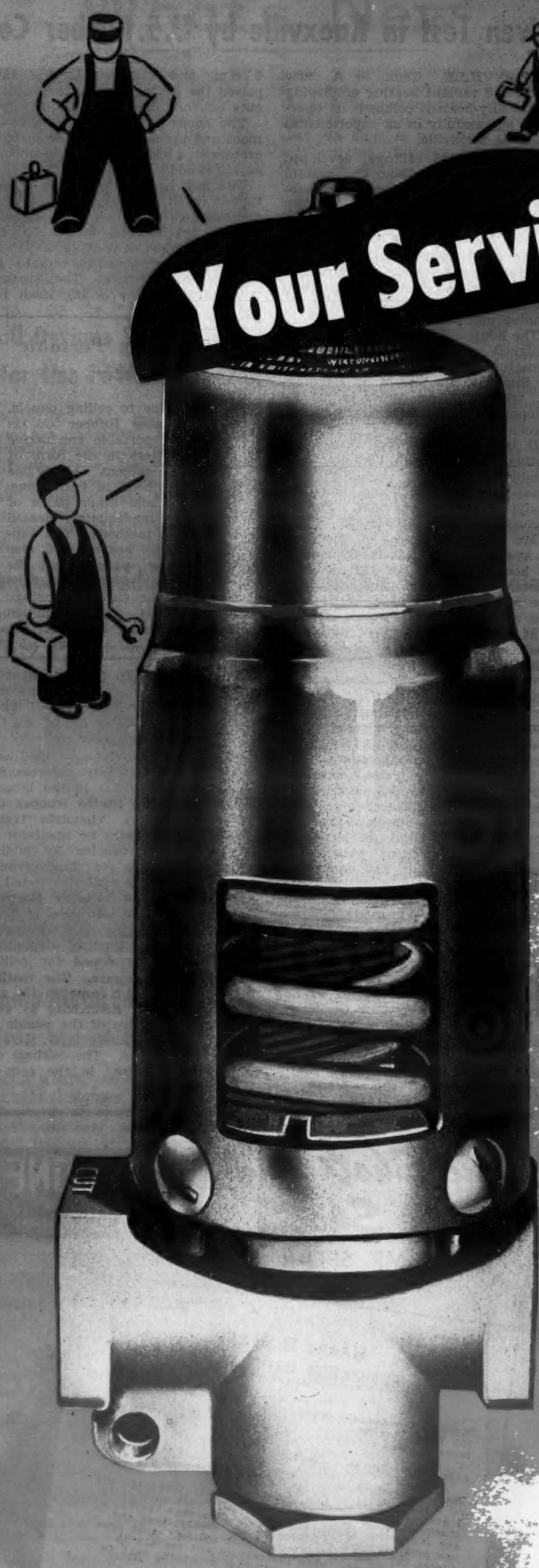
This sort of thing thwarts and stultifies the ambitious engineer, however. Like the salesman, he feels rather useless. Instead of pounding ahead to make a new dream come true, he's probably out chasing slow-to-arrive parts and materials. He isn't doing what he was trained for, or wants to do.

And this frustration he is experiencing bodes no good for the continuance of the Free Enterprise System. America, the Home of that System, thrives upon the development of new things and, consequently, new wants.

From dissatisfaction, from envy and yearning, come progress.

True, we'll need trained salesmen and merchandisers in the period just ahead of us. But they'll need something *new* to sell.

It's time that the dreamers among our engineers be given a shot-in-the-arm.



Your Service Work is EASIER...

because A-P REFRIGERATION VALVES ARE *Dependable*

SELF-CLEANING WATER REGULATING VALVE AVOIDS TROUBLE DUE TO DIRT AND LIME

Its many unique design and operating features place the new A-P Model 68-B Water Regulating Valve in a class by itself — for accurately controlling water flow in water-cooled condensing units.

INSURES YEARS OF DEPENDABLE SERVICE

Differing radically from conventional valve design, the Model 68-B employs a molded composition seal on the valve stem. This seal moves across the polished mirror-smooth stainless steel seat, to provide *self-cleaning* "wiping" action, thus avoiding common troubles due to dirt and lime in the water.

The Model 68-B has been laboratory tested in *sandy water* — the equivalent of many years of actual field use — and neither the sliding seal nor the seat show any sign of wear — indicating "lifetime" efficiency.

Put the Model 68-B on either new or present installations to improve operation and insure years of Dependable service. Ask your jobber about it, or write for Bulletin No. M100.

FEATURES OF A-P MODEL 68-B PRESSURE ACTUATED WATER REGULATING VALVE

Long Stroke gives closer, more uniform control.
Self-Cleaning action avoids troubles due to dirt or lime in water.
Wartime-proved packless "O" Ring valve stem seal
Chattering, water-hammer positively eliminated.
Drain plug permits valve flushing.
Flow not affected by compressor pulsations.
Head pressure range 50 p.s.i. to 150 p.s.i.
Adjusting nut easily accessible.
Used on Freon, Methyl Chloride, or Sulphur Dioxide systems.
Three sizes — ⅜", ½", ¾" inlet and outlet.

AUTOMATIC PRODUCTS COMPANY
2450 NORTH THIRTY-SECOND STREET • MILWAUKEE 10, WISCONSIN
EXPORT DEPT. 13 E. 40th STREET, NEW YORK 16, N. Y.

DEPENDABLE *Refrigerant Valves*

Stocked and Sold by Good Refrigeration Jobbers Everywhere . . . Recommended and Installed by Leading Refrigeration Service Engineers

HEAT TRANSFER EQUIPMENT
MARLO
COIL COMPANY
SAINT LOUIS, MISSOURI

$5,000,000 Rental Housing Project Is Largest Yet To Install Ingersoll Standard Model Utility Units

SEATTLE — Ingersoll standard model utility units, which centralize heating, plumbing, lighting, kitchen, and bath appliances in one central core, are being installed in a $5,000,000 housing development on Lake Burien Heights here.

This project is said to be the largest development under construction to use this modern factory-engineered and packaged utility unit. It is also said to be the first to use Ingersoll units in two-story apartment house construction.

There will be 44 two-story buildings containing 4, 8, and 12 apartments with 3½, 4, 4½, and 5½ rooms each. Veterans will receive first choice on apartment rentals, it is said.

The utility units are manufactured by the Ingersoll Steel division of Borg-Warner Corp. They are distributed in this area by Home Units, Inc.

On the kitchen side, the units contain a gas or electric range, a sink, a 7-cu. ft. refrigerator, and streamlined overhead metal cabinets. On the bathroom side are a wash basin, tub-shower combination, and lavatory.

Between the two, in the mechanical core, are a forced warm air furnace (gas or oil), hot water heater (gas or electric), all plumbing, vents, and stacks, chimney connections, and electrical connections and "boxes."

The standard model Ingersoll utility unit is said to be especially adapted for rental housing units because only two sides of the central utility core are used for attached kitchen and bath appliances. The builder is thus enabled to wall off each end if his floor designs are extremely compact or expand in either direction for larger kitchens.

Several design schemes were worked out to increase the size of the kitchen facilities of the utility unit to conform to FHA requirements for the larger apartments, it was said.

In general, additional 24 in. cabinets will be provided next to the range. In a few cases, the refrigerator will be moved over and work counter and cabinet additions inserted.

Interiors of some apartments show a variety of combinations provided to link the Ingersoll utility kitchen with the dining area. One of the basic plans combines the dining area with the kitchen in a room more than 14 ft. long.

Heating Home Through Electrified Ceilings Given Test In Knoxville by U.S. Rubber Co.

KNOXVILLE, Tenn. — A new method of radiant heating employing electrically-heated ceilings is operating successfully in an experimental house in Knoxville.

The electrified ceilings, developed by United States Rubber Co., contain a heating element of conductive rubber sandwiched between two thin layers of plastic. The entire ceiling in each room becomes warm.

The new heating system is automatically controlled by a thermostat and requires no more attention than the snapping of a switch at the beginning and end of winter.

The house selected for the test was designed and built by the Fonde Construction Co. of Knoxville, headed by Stuart Fonde and M. L. Bartling, Jr., who have been active in the development of electrically-heated homes.

It is a bungalow type house consisting of living room, bedroom, hall, combination dining room-kitchen, glass-enclosed porch and bath, all equipped with ceiling heat. The attached garage is not heated.

Mr. Fonde estimates on the basis of available data that the house can be heated at a cost of $72 per year. Power rates in the Knoxville area are lower than in most sections of the country, but Mr. Fonde believes that it is practical and economical to use electricity in any part of the United States provided the homes are properly designed and insulated to utilize this kind of heat.

"One should not look at the electric rates alone, he said. "After all, it is the number of kilowatt hours required per season that counts."

The Knoxville house consumed 1,960 kilowatt hours of electricity in 24 days beginning March 1 and continuing through March 24. TVA power is distributed on a sliding scale, starting at three cents for the first 50 kilowatts in any one month and reaching a minimum of three-fourths of a cent when the consumption exceeds 1,400 kilowatts.

In designing the house, Mr. Fonde put special emphasis on insulation. Hollow cinder blocks filled with insulating material are used for the walls. Above the electrified ceilings are 8 in. of rock wool insulation.

Further economy in electrical consumption is achieved by utilizing the natural heat of the sun. The house has large windows facing south-southeast that let in the sun between 9 a.m. and 4 p.m. During this period the ceiling heat automatically cuts off for intervals of 20 minutes.

The house is built without a basement and the floors are made of concrete with a special surface as smooth as hardwood.

The new heating system was first turned on in February and has been operating ever since. The temperature hovers between 69 and 70° F., said to be equivalent of 74 or 75° of regular heat produced by radiator or other localized unit. The surface temperature of the ceiling itself remains at 110°. To test the capacity of the heating system engineers raised the temperature to 80° F. when the mercury outdoors hit 5° F., the coldest day of the year.

Development of the electrified ceilings grew out of wartime research on conductive rubber in the laboratories of United States Rubber Co. Reversing nature, chemists transformed rubber from an insulator to an electrical conductor by adding high percentages of finely-ground carbon black, the material found in dry cell batteries. During the war conductive rubber was used in heating pads to keep ice off the propeller blades and wing guns of airplanes.

The panels developed for ceiling heat are 4 ft. square. The method of installing is the same as for any type of panel. Electricity is conducted to the edge of the panels by copper wire but there is no wire in the heating areas. The ceilings are painted or papered in the conventional manner.

Developing Portable Heaters

In addition to ceiling panels, United States Rubber Co. is developing portable conductive rubber heaters in the form of decorative screens to provide temporary heat in bathrooms, bedrooms, and other parts of the house inadequately heated by present methods. The supply of these heaters and also the ceiling panels will be limited for several months owing to the current shortage of materials and production facilities, it was announced.

GET THIS NEWEST SPRING CATALOG NO. 143

Send for YOUR COPY of the New Spring DEPENDABOOK today! Use YOUR letterhead please.

THE HARRY ALTER CO., INC.
1728 SO. MICHIGAN AVENUE, CHICAGO 16, ILL.
134 LAFAYETTE STREET, NEW YORK 13, N. Y.

NEW PROFITS for AIR COOLER DEALERS

WET BULB
DRY BULB
Like Shep's nose . . . a wet-bulb thermometer points the way to cool comfort— 15° to 25° cooler— in hot, dry summertime

Comfort Evaporative Cooling units supply 5 to 10 thousand c. f. m. of fresh, washed, filtered air cooled up to 96% of wet-bulb cooling efficiency.

AS "PANTS" KEEP A DOG COOL

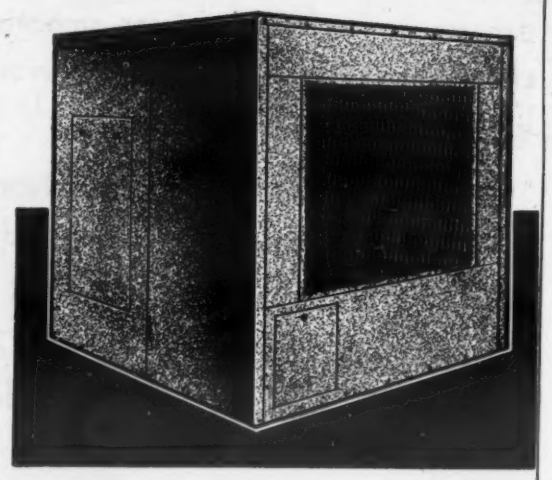
YOUR panting dog with his big, moist tongue is one example of Nature's gigantic cooling system—"Evaporative Cooling." Another—man's most highly perfected evaporative cooling plant—is the Comfort 4-Way Air Washer. With its flood of fresh outside air, washed, filtered, cooled—crowding the air ducts of your building—you have an ever-flowing sea breeze, "cool and refreshing as a spring morning."

Do YOU live . . . work . . . sleep . . . where the summers are scorching hot and dry? Have you a summer problem of *sleepless* nights . . . *listless* and irritable workers . . . *zest-less* customers and "poor business"? *Buy yourself an all-summer "sea breeze"* and set it flowing through your office, plant, shop, home. Install a Comfort and watch your family, business personnel, customers *perk up.*

Through years of peace and war, the Comfort Air Washer has brought natural, economical Evaporative Cooling to near-perfection . . . setting new standards that assure cool comfort indoors throughout hot, dry regions. Drawn in by its big turbine blower, a great stream of fresh outside air flows through a foot-thick curtain of atomized water and water-drenched Fiberglas mats. Here a tremendous absorption of heat energy takes place as the dry airstream "tears the water apart" and eagerly sucks up its evaporated particles. So Comfort Evaporative Cooling chills the airstream by as much as 83% to 96% of scientific "wet-bulb" cooling (10° to 25°) and diffuses it through the building, not as a "draft" but a b-r-e-e-z-e—cool, balmy and refreshing.

Comfort Air Washers are now bringing cool-as-spring indoor living and working conditions to millions at work, at play, at home—"pushing back the jungle" of scorching, debilitating heat throughout wide geographical ranges (excepting only areas where all-summer humidity is extremely high). Weigh the worth of an ever-flowing supply of fresh, washed, filtered, cooled air to you in your office, bank, plant, shop, store . . . hotel or motel, restaurant or tavern . . . club, hospital, institution . . . and in your home. For information, write today, giving type of building, cubic content and location. Address Comfort Products Corporation, 2220 Lamesa, Dallas 2, Texas.

Comfort 4-Way Air Washer
CHANGES • WASHES • FILTERS • COOLS



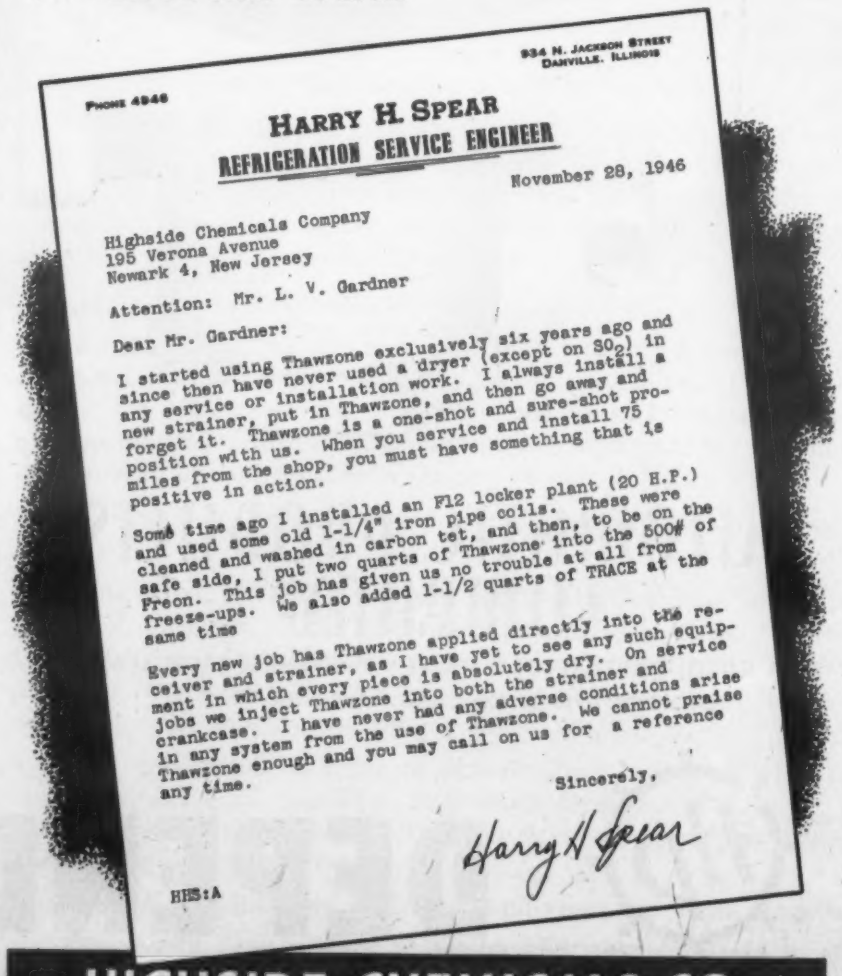
...from COMFORT COOLER LEADERSHIP in the Great New Industry of Evaporative Cooling.

As Advertised in
• *FORTUNE*
• *BUSINESS WEEK*
and 30 Other Media

COMFORT PRODUCTS CORPORATION
2220 LAMESA • DALLAS 2, TEXAS

"One Shot and Sure Shot" . . . SAYS MR. SPEAR

THAWZONE PATENTED The PIONEER FLUID DEHYDRANT



934 N. JACKSON STREET
DANVILLE, ILLINOIS
PHONE 4946

HARRY H. SPEAR
REFRIGERATION SERVICE ENGINEER

November 28, 1946

Highside Chemicals Company
195 Verona Avenue
Newark 4, New Jersey

Attention: Mr. L. V. Gardner

Dear Mr. Gardner:

I started using Thawzone exclusively six years ago and since then have never used a dryer (except on SO_2) in any service or installation work. I always install a new strainer, put in Thawzone, and then go away and forget it. Thawzone is a one-shot and sure-shot proposition with us. When you service and install 75 miles from the shop, you must have something that is positive in action.

Some time ago I installed an F12 locker plant (20 H.P.) and used some old 1-1/4" iron pipe coils. These were cleaned and washed in carbon tet, and then, to be on the safe side, I put two quarts of Thawzone into the 500# of Freon. This job has given us no trouble at all from freeze-ups. We also added 1-1/2 quarts of TRACE at the same time

Every new job has Thawzone applied directly into the receiver and strainer, as I have yet to see any such equipment in which every piece is absolutely dry. On service jobs we inject Thawzone into both the strainer and crankcase. I have never had any adverse conditions arise in any system from the use of Thawzone. We cannot praise Thawzone enough and you may call on us for a reference any time.

Sincerely,
Harry H Spear

HHS:A

HIGHSIDE CHEMICALS CO.
195 VERONA AVE. NEWARK 4, N. J.

What's New

* * *

Ball Designs Special Jar For Use In Home Freezer

MUNCIE, Ind.—Ball Bros. Co. here has developed a glass jar specially designed for home freezing of foods. Called the "Ball Freezer Jar," it is made of clear flint glass, with rounded straight sides tapering slightly toward the base to provide for easy removal of contents.

A screw-on cap, said to be rust-proof, is provided with a specially developed rubber compound to assure the jars being airtight and leakproof. This cap, which is recessed to provide easy stacking, is reusable.

When being filled or emptied, the container remains rigid minimizing the possibilities of accidents. Wide mouths provide easy filling and emptying of the jars, which are said to withstand a variety of temperatures.

To eliminate breakage from pressure, the manufacturer has designed the cap so that it will bulge or be forced off to relieve pressure which would otherwise break the jar.

Packing of the jars is done in three simple steps the Ball company points out: jars and caps are washed in hot soapy water, rinsed, and cooled; they are then filled, leaving sufficient head space in each jar for expansion; caps are screwed tight.

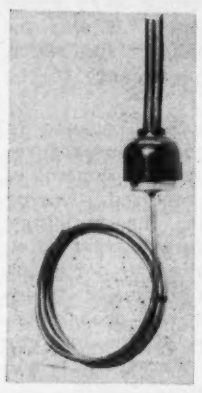
Removal of the contents may be accomplished in three ways the manufacturer explains: by standing the jar under cold running water, by placing the jar in cold water, or by letting it thaw at room temperature or in refrigerator.

Cutler-Hammer Turns Out 'Acorn Size' Freezer Alarm

MILWAUKEE—A new low voltage electrical alarm switch designed to warn of mechanical difficulties in commercial and home freezers has been introduced by Cutler-Hammer, Inc. here.

The new switch is especially valuable in warning of dangerous temperature rises in remotely located freezers.

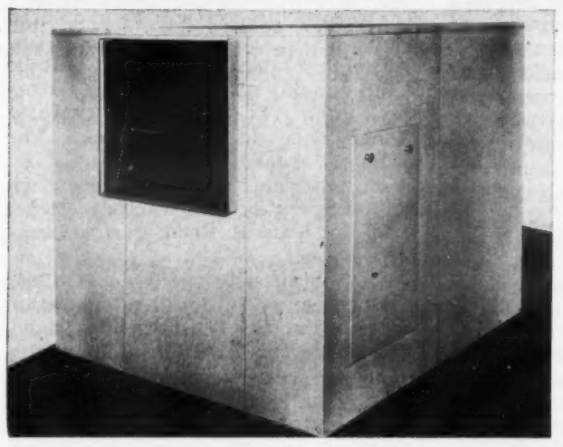
Installed with either a bell, light, or buzzer alarm device, the switch is designed to function as soon as the temperature in the freezer rises to a predetermined danger point. The alarm device begins to operate while the interior temperature is still relatively low thus providing a reasonable period of time for emergency repairs before food spoilage starts.



The Cutler-Hammer freezer alarm switch is unique in that it contains a complete thermostatic element together with the contact mechanism notwithstanding the fact that the entire device is no larger than an acorn.

Comfort Introduces New 4-Way Air-Washer-Cooler

DALLAS, Tex.—A four way air washer-cooler, which is said to change, filter, wash, and cool air at a rate of 5,000 to 10,000 cu. ft. per minute and with an efficiency up to 96% of wet-bulb standards, is now being produced by the Comfort Product Corp. here.



The "Comfort Air Washer," as the unit is called, cools by evaporation and can be used wherever heat exists without excessively high humidity, according to Jack Spitzka, president of the firm.

By using the correct size and number of Comfort units, a complete air change can be made every one to three minutes in any type of public, business, or residential building, Mr. Spitzka claimed.

8-Door Low-Temp. Case Installed In Coast Market

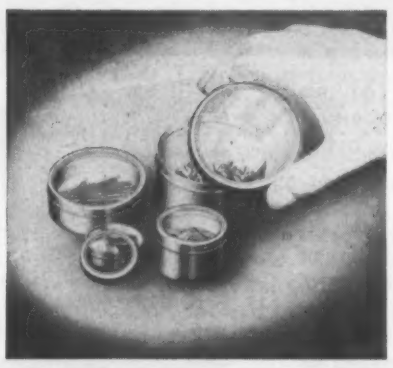
LOS ANGELES—An 8-door low-temperature refrigerator has been installed at the Market Basket store at Five Points here, the dimensions of the refrigerator exactly fitting those of standard wooden gondolas on either side.

The refrigerator is used for milk, cheese, and other dairy products, and allows the customer to pick up milk and dairy products without making a "side trip" to the rear of the store. There are four doors on either side, which make it convenient to reach in, and sales have increased by 25%.

Handy Metal Container Has Transparent Plastic Lid

COLUMBUS, Ohio—Designed for the handy storage of nuts, bolts, tacks, and other tiny items, small metal containers with transparent plastic lids are being manufactured by the Buckeye Stamping Co. here.

Known as "Vue-Bins," these containers keep their contents in full view even when closed, doing away with the need for labels or other identification, the company declares.



Vue Bin comes in 10 sizes.

Made in both deep and shallow types, Vue-Bins come in 10 different sizes, according to the manufacturer. Diameters range from 1½ to 3 in. and depths from ½ to 2¼ in.

The lids are claimed to fit snugly to the bodies of the cans. They can be removed or replaced with a short twist of the wrist, the manufacturer says.

IN REFRIGERATION EXPERIENCED MEN CAN SERVE YOU BEST

Dick Etchison manages our sales department. His refrigeration experience totals 21 years.

WEST COAST SUPPLY JOBBERS SINCE 1928

REFRIGERATION SERVICE INC
3109 BEVERLY BLVD
LOS ANGELES 4 CALIF

THE RESPONSE TO
PREST-O-MATIC
has been terrific!

Scores of distributors and dealers asked for information. We gave them the facts—They bought. They proved to themselves how easy it is to sell PREST-O-MATIC CARBONATORS. The reasons are obvious—

No precooling of water necessary →
Takes up no valuable refrigerated space →
No Pumps →
No Springs In Vital Mechanism →
No Floats →
No Motor, Gears, Belts or Chains →
Capably Engineered →

Prompt Delivery ↓

Fully Guaranteed ↑

All vital parts of Stainless Steel ←
Attractive Cabinet ←
Produces High Volume Soda ←
Easy to Install ←
Attractively priced ←
Liberal Discounts ←
High Capacity ←

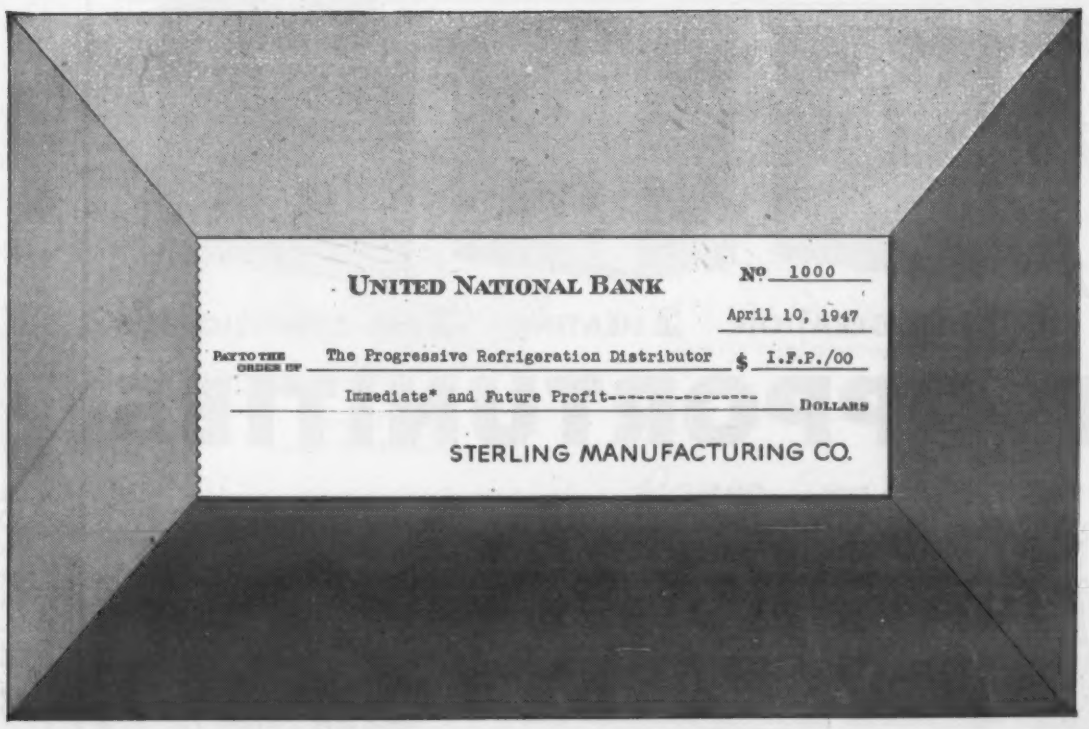
LET US GIVE THE FACTS - YOU BE THE JUDGE!
SOME DISTRIBUTORSHIPS AVAILABLE.

Wire or Write today.

THIEL MANUFACTURING COMPANY
315 BEAUBIEN STREET DETROIT 26, MICHIGAN

A NEW FORCE IN THE TRANSPORTATION REFRIGERATION PICTURE

NOW AVAILABLE to Refrigeration Distributors! Sterling Manufacturing Company offers these two new Sterling truck refrigeration systems to be mounted either underslung or inside the body. Tried and proven, and engineered to handle the largest truck or trailer built, the units are completely automatic. Compact coil assembly for both inside and underslung units, 53¼ inches high, 63 inches long, 13¼ inches wide, Sterling engineered to properly balance capacity of power unit. Temperature range from —20° to 50°. Here is an opportunity for progressive refrigeration distributors to tie in with a new truck unit manufacturer offering both immediate and long-term profits. For complete details and specifications, write Sterling Manufacturing Company today.

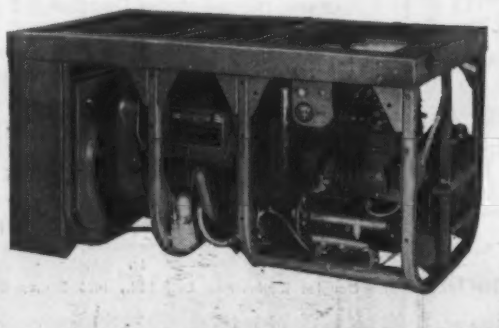

UNITED NATIONAL BANK
No. 1000
April 10, 1947
PAY TO THE ORDER OF The Progressive Refrigeration Distributor $ I.F.P./00
Immediate* and Future Profit---------- DOLLARS
STERLING MANUFACTURING CO.

STERLING TRUCK REFRIGERATION UNIT MODEL A-U

For external installation—weight complete with coil assembly, approximately 1,000 pounds. Self-contained and completely automatic truck refrigeration unit designed for underslung mounting. Entire structure made of steel and stressed for a high factor of safety against concentrated shock loads. Enclosed by quickly removable panels provided with convenient service doors. Photograph below shows cover panels off. Overall dimensions, 53⅛ inches long, 27 inches high, and 28 inches wide.

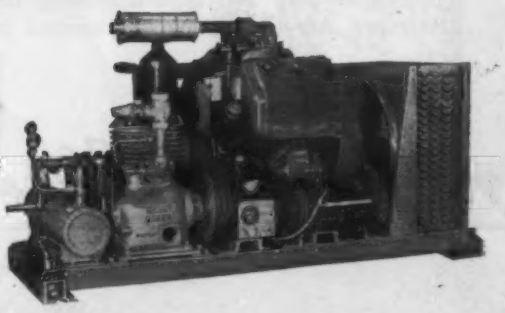
STERLING TRUCK REFRIGERATION UNIT MODEL A

Designed for mounting inside truck or trailer body on the housing frame and accessible through a service door. Compact design for installation at forward end of body. A minimum amount of space required. Weight complete with coil assembly approximately 1,000 pounds. Inside unit mounted on aluminum frame supported by rubber vibration dampeners. Overall dimensions, 64 inches long, 30 inches wide, and 30 inches high.



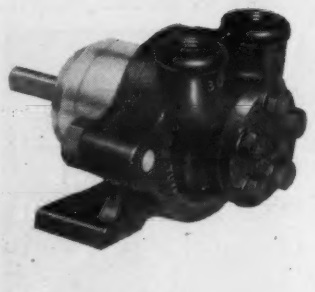
*Limited quantity available NOW for IMMEDIATE shipment.

STERLING



STERLING MANUFACTURING CO., 2523 FARNAM ST., OMAHA, NEBR.

TRANSPORTATION REFRIGERATION AND AIR CONDITIONING UNITS



Tuthill small pumps are known the world over for their dependable performance. In pressure lubrication service, these mechanically sealed pumps have done a particularly outstanding job because they are reliable, quiet, leakfree—and their lower power consumption effects operating economy. Write for complete details on Model L series today.

TUTHILL PUMP COMPANY

939 East 95th Street • Chicago 19, Illinois

Complete 'Zoning' Marks Air Conditioning System for 10-Story Birmingham Building

Installation Made Without Displacing Occupants

BIRMINGHAM, Ala.—Year-around air conditioning of the 10-story, 20-year old Liberty National Life Insurance building here has just been completed with installation of a Carrier "Conduit Weathermaster" system. Cost of the installation was $113,900.

Because of the small duct space required by the system, it was installed during normal working hours, without serious inconvenience to the occupants.

Engineers found that because of the building's various exposures, three separate zones for proper control of temperature were required. During spring and autumn, the building's southeast and southwest areas often require cooling, while the northwest zone requires some heating to maintain comfort. To provide proper conditions in any part of the building the year around, temperature and humidity controls were zoned.

SEPARATE COOLING CYCLES

Each zone circuit is equipped with an individual water heater, pump, strainer, and zone piping with a complete set of controls to maintain the desired zone water temperature. Arrangement of the controls gives each zone an isolated water circulating system, avoiding the possibility of hot water entering the water chiller of the refrigeration machine when heating and cooling may be needed at the same time.

The installation required 248 Weathermaster room units. Placed under the windows, they circulate the hot or cold air, delivered under pressure. A control valve, containing a thermostatically controlled pointer, permits the occupants of each room to control the temperature.

However, to maintain standard comfort conditions in each zone, engineers of the Atlanta office of Carrier Corp. formulated a temperature chart based upon varying outside conditions. By consulting this chart, and setting the indicator at the proper point, the zone controls may be quickly reset, giving each area its proper temperature, without individual room valves.

AIR CLEANERS, ODOR REMOVERS

To filter out the soot and dirt deposited in the air by Birmingham's many bituminous coal-using industries, all outside air drawn into the building flows through self-cleaning, electrostatic types of air filters. In addition, all return air is filtered by standard cleanable filters, and passed through activated charcoal canisters to remove odors.

Other Carrier equipment includes one centrifugal refrigeration unit of 200 ton capacity, and one centrifugal station air treating unit consisting of filters, preheater, surface dehumidifier, reheater, fan, and sound absorbers.

Fedders-Quigan Reports $905,511 Profit In '46

BUFFALO—Fedders-Quigan Corp. here has reported a net profit of $905,511 or 75 cents per share for 1946, compared with $315,745 or 26 cents per share in 1945.

Net sales for the two periods were $11,642,935 and $6,634,983, respectively.

Contractors In Seattle, Spokane Band Together

SEATTLE, Wash.—The refrigeration contractors association of Seattle, Wash., and the Inland Empire Association of Spokane, Wash., have joined forces to form the Refrigeration Contractors Association of the State of Washington. Headquarters are in Seattle, and in charge of Executive Secretary Arthur M. Carney.

The new group starts with 40 members, and has affiliated with the National Association of Refrigeration Contractors.

James Lessard, Automatic Refrigeration Co., Seattle, is president; S. F. Thomas, W. E. Stone Co., Seattle, is secretary-treasurer.

Five regions have been set up in the state with a regular monthly meeting scheduled for each. Regional directors are as follows:

Seattle Region: C. L. Guinn, Puget Sound Refrigeration Co., Seattle; and F. L. Van Winkle, Tacoma Refrigeration Co., Tacoma.

Chehalis Region: Fred Cheatham, Cheatham & Carter, Olympia; and William Vogel, Coastal Refrigeration, Chehalis.

Wenatchee Region: John Lavender, Lavender Refrigeration Co., Wenatchee; and Clifford Ruxton, Ruxton's, Inc., Yakima.

Walla Walla Region: K. G. Bentley, Bentley's, Walla Walla; and Tom Morrison, Empire Electric Co., Pasco.

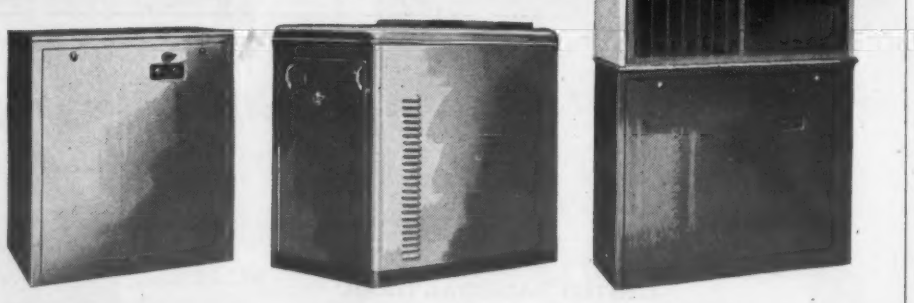
Spokane Region: Ed Matthews, Electro-Kold Refrigeration, Spokane. The second director will be appointed soon.

The first all-state meeting will be a full one-day affair in Seattle, Saturday, June 14, winding up with a dinner-dance in the evening. The principal speakers will be Warren W. Farr, president, National Association of Refrigeration Contractors, Cleveland, and Paul B. Reed, Perfex Corp., Milwaukee.

An invitation to the June 14 affair has been extended to all refrigeration contractors in Washington, Idaho, Vancouver, and British Columbia.

Oregon is not included because a new state association being formed there will hold a state meeting in Portland June 13.

3 (NOT JUST ONE)



1 REFRIGERATION 2 HEATING 3 AIR CONDITIONING

PROFIT OPPORTUNITIES

THE Chrysler Airtemp *Triple Line* gives dealers something to sell every season — an opportunity for profits *every* month! Another advantage is that Chrysler Airtemp dealers sell products with national acceptance—backed by Chrysler Corporation, world-famous for engineering and mass production skill.

In the home heating field, Chrysler Airtemp offers a most complete line — boilers and warm air heat for gas, oil or coal. The air conditioning line includes Packaged Air Conditioners, pioneered by Chrysler Airtemp for businesses; cooling and heating combinations for homes, and the new Chrysler Airtemp Room Air Conditioners for homes and offices. Chrysler Airtemp commercial refrigeration comprises compressor-condenser units in capacities for every requirement—reach-in refrigerators and cases, beverage, water, milk coolers and all other applications.

Chrysler Airtemp dealer agreements are written for *all three,* for one or for two lines. For particulars, please write . . .

AIRTEMP DIVISION OF CHRYSLER CORPORATION
Dayton 1, Ohio
In Canada—Therm-O-Rite Products, Ltd., Toronto

Automatically Yours

CHRYSLER AIRTEMP
DIVISION OF CHRYSLER CORPORATION

FOR YEAR-ROUND PROFIT OPPORTUNITIES

HEATING • AIR CONDITIONING • COMMERCIAL REFRIGERATION

How ADJUSTABLE air diffusers increase the efficiency of supply air distribution

Kno-Draft Adjustable Diffusers offer all the advantages of draftless air diffusion plus fast system balancing and air pattern control

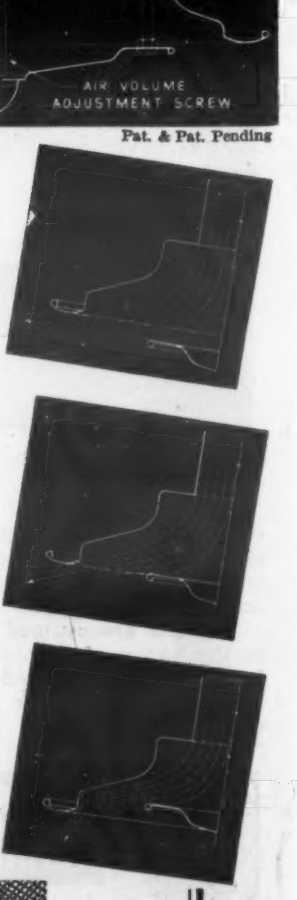
Pat. & Pat. Pending

Fast System Balancing: Volume damper regulates the air outlet aperture uniformly without affecting the outlet velocity or diffusion pattern.

Positive Air Pattern Control: Air direction adjustment affords any angle of air discharge from vertical to horizontal needed to accommodate ceiling heights, individual or seasonal requirements. It can expel chilled air parallel to the ceiling or eject heated air downward to prevent stratification.

Specify Kno-Draft Adjustable Air Diffusers for better mixing control of room and supply air, more uniform temperatures throughout the occupied zone and noiseless, draftless air distribution.

Send for FREE handbook containing sketches, charts, dimension prints and instructive text that simplify the selection and installation of air diffusers. For your copy, please write Dept. A-13 on company letterhead.



W. B. CONNER ENGINEERING CORP.
AIR DIFFUSION AIR PURIFICATION AIR RECOVERY
112 East 32nd Street CONNOR New York 16, N. Y.
IN CANADA:
Douglas Engineering Co., Ltd., 1408 Bishop St., Montreal 25, P. Q.

Refrigeration Problems

And Their Solution

By P. B. Reed

For Service and Installation Engineers

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Temperature Difference

(Another 'Mystery' Story)

A man who had some refrigeration experience decided to build a frozen food chest for his own use. He had a certain place in his basement that he wanted to build the cabinet into, and he would build it to exactly fit into that space. He had a workbench in his basement and plenty of wood-working tools that he used very well.

He got some of his old books and reviewed his knowledge of cabinet construction, frame, insulation, vapor seal, lid construction, etc. He had access to seasoned lumber and other material.

He knew that he should maintain an average temperature of 0° F. and he also knew that his basement was about 75° winter and summer, and if anything, cooler than that in the summer when the furnace was not running. He used 4 in. of good insulation and packed and sealed it well.

He bought a standard stainless steel liner made by a well known manufacturer. It had the evaporator coil stamped and formed right into the side sheets of the liner itself, so he felt confident that he would have sufficient evaporator for the load.

He decided to use "Freon-12" and to feed it into the evaporator by a thermostatic expansion valve. He put a heat exchanger just at the outlet of the evaporator coil and tightly clamped the expansion valve bulb to the suction line just beyond the heat exchanger.

He put it there rather than between the heat exchanger and the evaporator coil because the condensing unit was to be placed over in an opposite corner of the basement and the long suction line would evaporate any "slop-over" liquid long before it reached the compressor.

With the heat exchanger between the evaporator outlet and the expansion valve bulb he could be assured of a fully active evaporator.

LOCATING THE TX VALVE BULB

To prevent a warm bulb holding the valve open somewhat on the off-cycle, he secured it tightly to the suction line and carefully insulated and sealed this section of the suction so that it would stay cold during the off-cycle.

He intended to control the job thermostatically, but the condensing unit came with a low pressure control so he used it instead.

HE ESTIMATES MACHINE SIZE

In figuring the size of the condensing unit he used a temperature difference of 75° between the inside temperature (0° F.) and the basement temperature (75° F.). With 4-in. insulation his calculations gave him a heat leakage load of 1,200 B.t.u. per hour.

He found that an average ⅓-hp. low-temperature air-cooled condensing unit was rated at about 2,000 B.t.u. per hour at 0° in a 90° room. He estimated that it would do a little better in his 75° basement, perhaps about 2,100 B.t.u.

He figured that there would be very little load, normally, other than the heat leakage, for the cabinet would not be opened more than a couple of times a day, and so except when something would be put in to be frozen, the ⅓-hp. unit should not run more than about two-thirds of the time; that is, that the total load wouldn't average more than around 1,400 B.t.u. per hour.

HE INSTALLS A ⅓ HP. UNIT

So he bought a new ⅓-hp., "F-12," low-temperature unit (motor loaded at 0° F.) and connected it to his cabinet. First, he pumped a good vacuum, then released the charge and added "Freon-12" until the bull's eye in the liquid line showed no bubbles, after which he added a couple of more pounds for reserve.

SETTING PRESSURE CONTROL

At a guess he set the pressure control at 15 p.s.i. cut-in and 8 p.s.i. cut-out. The machine ran constantly for about two hours and then cut off, with the thermometer hanging inside the freezer showing 30°. He turned the pressure control down a couple of pounds to 13 and 6 and, with the machine running, he adjusted the expansion valve until he began to get frost-out on the suction line. He then knew that the evaporator coil was fully active. The suction pressure gauge then showed 9 p.s.i. He looked on his chart for "Freon-12" and saw that this compared to about 0°.

This readjustment of the expansion valve and resetting of the pressure control made the machine run another hour or more and when it cut off this time, the thermometer showed 15°.

Again he reset the pressure control downward a couple of pounds so that now it cut on at 11 and off at 4 p.s.i., but before he got the thermometer down to 0° F., he had the pressure control cutting off at 2 p.s.i. and on at 13, for he found that he had to widen the differential to 11 lbs.

FINISHING THE INSTALLATION

By this time the unit was running most of the time but he did not think much of it, for he knew that there was initial heat to be taken out of the liner and some from the insulation. He checked the oil in the compressor, added a little, oiled the motor and checked the belts. He let it run overnight.

When he came down to see it next morning, the machine was running and the temperature in the chest was 2° F. During the day he bought 75 lbs. of frozen foods. He put them in his freezer at once. When he did, the condensing unit was running.

He figured that some of the frozen foods he had bought and put in it had thawed some, so still he wasn't worried about the running time. Hadn't he chosen a condensing unit with a capacity almost twice the expected load, except when freezing something?

(To Be Continued)

WANT CUSTOMERS at 25¢ each?

Install "WARNER" thermometer "ON*SPOT" in Prospect's box

Advertise ON*SPOT business originates! Domestic model $25/100, ½ cash, Bal. C.O.D. ON*SPOT ADV., Box 86, Gulfport, Fla.

ALUMINUM SHEETS

Quantity of 3S ½ hard 36 x 96 sheets available in .032 and .040 thicknesses for immediate shipment from Dallas stock. Telephone: Riverside 4536, 2809 Canton St., Dallas, Texas, Mr. Brown.

Members of the Refrigeration Equipment Wholesalers Association

Your refrigeration parts and supply house in Central New York and Northern Pennsylvania

CENTRAL SERVICE SUPPLY

647 S. Warren Street, Syracuse, N. Y. Phone 5-4000 & 3-0313
209-211 Jefferson Ave., Scranton, Pa. Phone 3-4000

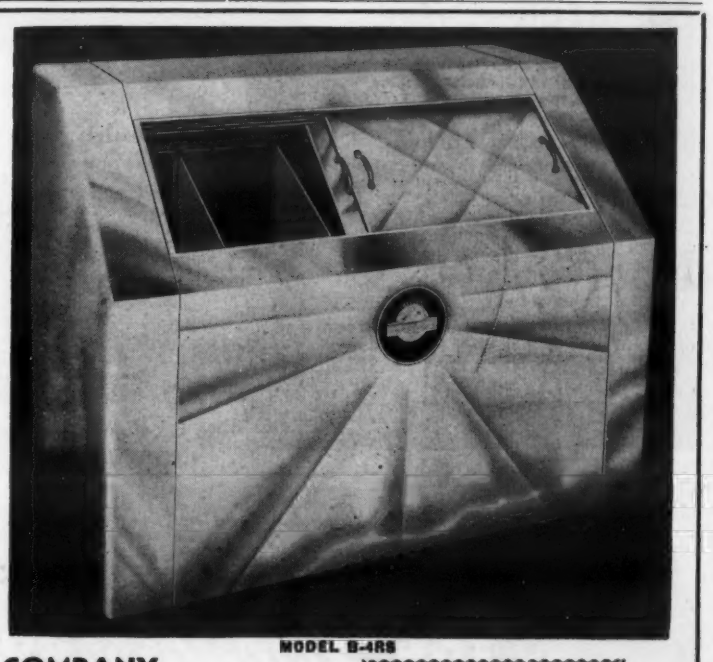
AT LAST!

OUR DIFFERENT DELAWARE FREEZERO DRY BEVERAGE COOLER

Is now available to wider markets.

Real facts about this different cooler—

Sturdy all steel welded construction
Stainless Steel Interior
Stainless Steel Exterior—top—front and ends with stainless steel track equipped with stainless steel removable lids and adjustable separators.
Concealed freezer coils—built into walls no blower—no fin coil to take up valuable space.
Uniform temperature throughout
5" fibreglass insulation compressed to 4½"-vapor proofed
Attractive modern design for fast, speedy service
Economical and dependable—low cost operating.
Easy to clean inside and out.
And yet, with all these dynamic sales features this different Delaware Freezero Beverage cooler is no higher in price than the average cooler.
Write today—don't delay franchises for distributors and dealers. Profit with DELAWARE FREEZERO PRODUCTS.
Each product built is the greatest value in the field.



MODEL B-4RS

DELAWARE REFRIGERATION COMPANY
834-850 N. Sixth Street Philadelphia 23, Pa.
Manufacturers of Freezero Walk-in and Storage coolers, Display cases and Freezer cabinets, Beer Cooling equipment and other items.

OUR 17th ANNIVERSARY

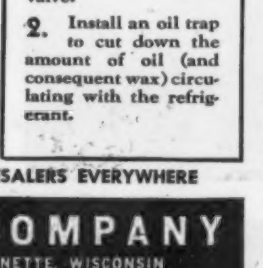
The Ansul Research Staff REPORTS ON . . . . . **WAX causes frozen valves too!**

HERE'S FURTHER *Proof* RESULTS OF MACHINE TESTS

The equipment used consisted of ¼ hp. motor, reciprocating compressor and dry coil with the thermostatic expansion valve located in contact with the coil.

A filter of steel wool and fine copper screen was placed in the liquid line just ahead of the expansion valve. The liquid line leading to the filter was coiled about the expansion coil to insure feeding cold liquid to the filter. The expansion valve, liquid line, filter and expansion coil were placed in a metal container and insulated with rock wool. A pentane thermometer, attached to side of filter, recorded temperatures which were, of course, much lower than corresponding temperature taken in other parts of the equipment.

After the equipment had operated for four days with the filter at approximately −50 degrees F., the filter was quickly removed, dismantled and photographed while still cold. For example, Photograph A shows a considerable separation of wax. Photograph B shows a portion of this wax after removal from the filter.



A—Wax separated on filter at −50° Fahrenheit

B—Wax removed from filter at −50° Fahrenheit

ANSUL WHOLESALERS are ready and equipped to render an intelligent, co-operative service to refrigeration engineers and maintenance men on problems which arise from time-to-time in the operation of refrigerating systems.

FOR EXAMPLE:

Samples of ice machine oils, submitted by users of Ansul Refrigerants to Ansul Wholesalers, are tested by Ansul laboratories without charge by the Ansul Standard Wax-Oil Separation Method. This method, developed and standardized especially for use in connection with oils used in refrigerating systems, provides an accurate determination of the amount of wax which separates from an oil at low temperatures. *REG. U.S. PAT. OFF.

SEND FOR THIS BULLETIN

An informative reprint, "THE SEPARATION OF WAX FROM OIL-REFRIGERANT MIXTURES," will be sent on request. No obligation. Just address . . .

REMEDIES

To eliminate the wax trouble in expansion valves and coils:

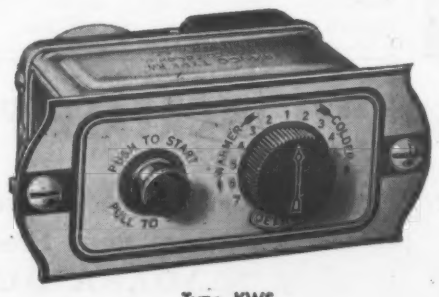
1. Use an oil which separates little or no wax from its mixture with the refrigerant at the operating temperature of the valve.
2. Install an oil trap to cut down the amount of oil (and consequent wax) circulating with the refrigerant.

ANSUL REFRIGERANTS ARE AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS FOR KINETIC'S "FREON-11," "FREON-12," "FREON-21," "FREON-22" AND "FREON-113"

SATISFACTION A MILLIONFOLD!

That's What RANCO-minded Service Men Give Customers



Type KWS
General Replacement

Ranco Refrigeration Controls, with their sturdy construction, precision machined parts, long life and beauty of design, are the answer to every replacement requirement.

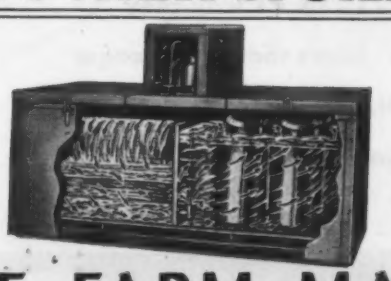
CONSULT YOUR JOBBER TODAY

Ranco Inc. COLUMBUS 1, OHIO

WILSON SELF-CONTAINED AUTOMATIC HIGH WATER LEVEL **ZERO-FLOW**

STOPS MILK SPOILAGE

COOLS THE DANGER ZONE FAST



Wilson ZERO-FLOW MODEL ZF8 HX50

Packaged-Unit Milk Cooler
Sizes from 4- to 24-can capacity

TO CAPTURE AND HOLD **THE FARM MARKET**

Specify Genuine "Refrigeration by Wilson"

• FARM MILK COOLERS • FARM FREEZERS • FARM REACH-IN REFRIGERATORS • FARM WALK-IN REFRIGERATORS

For Franchise Information, Address Dept. 11 WILSON REFRIGERATION, INC., Smyrna, Delaware

Heat Pump Energy Cost Put at $160 a Year for Indiana Test Unit

2-Year Operation of Ground-to-Air Machine In Residence Analyzed by Utility Official

CHICAGO — Detailed results of two years' "successful" operation of a ground-to-air heat pump in Indianapolis were described during the 13th annual sales conference of the Edison Electric Institute by A. C. Crandall, vice president of Indianapolis Power & Light Co.

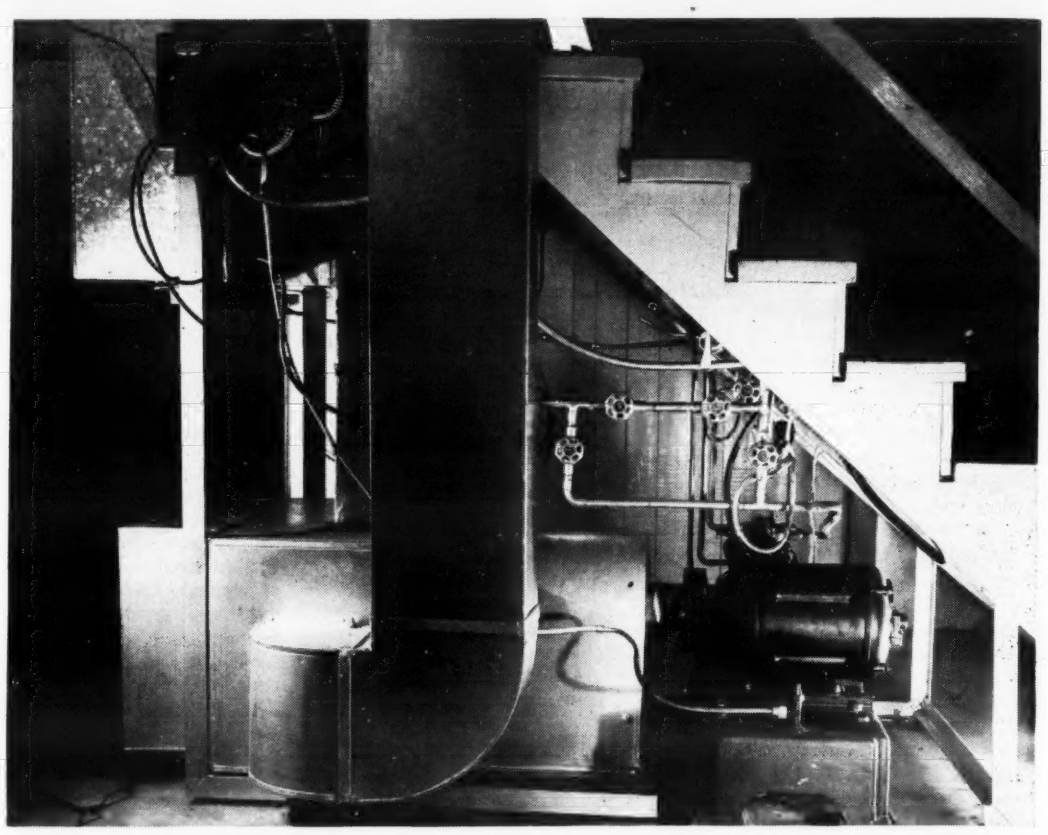
On the basis of this experiment and extensive study of his company's area, Mr. Crandall estimated that 25% of the new homes, valued at $9,000 or more, to be built in Indianapolis over the next five years will be equipped with heat pumps for both heating and cooling.

Another 10% of the now-existing homes in that city will buy heat pumps during the same period, he predicted, making a total of 3,480 estimated installations.

In making these forecasts, Mr. Crandall explained, it was assumed that a unit will be available in fair supply within the next 12 to 18 months at an installed price not too far above that of other types of automatic heating equipment. It was assumed, too, he said, that the price will be considerably lower than the combined cost of two automatic units —one for heating and one for cooling and air conditioning.

Asserting that the heat pump "is worthy of the best efforts of our industry," Mr. Crandall urged utilities to accelerate their interest in it. He told the conferences that the public, particularly the new home builder, is eager for this service.

"No other domestic appliance, at a comparable stage in its development, has stirred such a volume of public interest as the heat pump," Mr. Crandall declared. "This is understandable because it represents a truly revolutionary means of complete air conditioning in the home."



Side view of heat pump designed, constructed, and installed in his six-room home by R. C. Webber shows 3-hp. motor and compressor assembly mounted on base outside fan housing. Vertical pipe (foreground) is duct from cold air outlet on first floor. Boxes (left) house condenser units.

Mr. Crandall recalled that the heat pump with which Indianapolis Power & Light has been closely associated, was conceived by R. C. Webber, then supervisor of the company's appliance service department. Early in 1945, he said, Mr. Webber approached H. T. Pritchard, president, with the idea of taking heat directly from the ground through buried coils containing a refrigerant.

Mr. Webber proposed to design, construct, and install a pump in his residence and stake his family's comfort on its successful operation, it was related. Since Mr. Pritchard had long been interested in the heat pump, a basis of cooperation was agreed upon and work started.

It was explained that Mr. Webber's home is 31 ft. x 28 ft., with five rooms downstairs and one upstairs. The first floor has about 7,000 cu. ft., while the basement has approximately 6,000.

Heat load, using ASHVE constants, is 38,193 B.t.u. per hour for a design range of -10 + 70°. The house is equipped with storm windows and doors and 2 in. of zonolite insulation on the roof and sides.

"To establish the greatest operating economy," Mr. Crandall pointed out, "the condenser coils were placed in a 125-gallon steel water tank. From this tank the water was circulated under pressure through individual radiators installed in the existing hot air registers in the floor. At each register a seperate fan was mounted horizontally under the radiator for forced air circulation.

"This job operated well and with good efficiency for the balance of the heating season. However, it was evident, after short operating experience, that no water storage was necessary and that adequate heat could be taken from the ground and delivered directly through warm air ducts to the heated space.

"This direct method would reduce heat transfer losses, eliminate the water circulating pump and, by making it possible to circulate greater air volume, maintain a more even temperature throughout the house.

"In the summer of 1945 the water system was removed and the present earth-to-air unit installed. This unit has operated continuously through the heating season of 1945-46 and thus far through the heating season of 1946-47 without any changes except pressure adjustments and a small increase in the volume of air circulated."

Before presenting highlights of the unit's performance by means of charts and tables, Mr. Crandall exhibited pictures of the installation in Mr. Webber's basement.

A close-up side view of the pump (see Fig. 1) shows the 3-hp. motor and compressor assembly mounted on a base outside the fan housing. The vertical pipe in the foreground is a duct from the cold air outlet on the first floor. Boxes at the left house the condenser units.

Fig. 2 is a front view. The vertical duct is directly opposite the one shown in Fig. 1, and comes from the cold air outlet on the first floor into the bottom condenser housing. Rectangular ducts on the ceiling carry hot air from the condenser to the various registers on the first floor.

(At the time this equipment was installed, Mr. Webber was unable to obtain the proper size condenser and therefore was forced to use two small ones.)

According to a temperature chart recorded in the living room on the coldest day of the 1945-46 heating season (Jan. 22, 1946), the inside temperature remained within 2° of the 74° thermostat setting although

(Continued on next page)

SCHNACKE
AIR CONDITIONING AND REFRIGERATION
COMPRESSORS

Featuring:
Refrigerant--cooled, Replaceable, Steel Cylinder Sleeves
(Cool gas from the evaporator cools the cylinders, resulting in less wear and greater refrigerating capacity.)
Force Feed Lubrication
(Positive rotary pumps force oil to shaft seal, bearings, and all moving parts.)
All Vital Service Parts Interchangeable In All 29 Models
You get these—and many other advanced features—in SCHNACKE Condensing Units. Additional production assures reasonably prompt deliveries.

"F" Model, 10 to 25 H.P.
Illustrated above is the "F" Model, ranging from 10 H.P. low temperature to 25 H.P. Air Conditioning. In the SCHNACKE line there are 29 models covering the full range of high and low temperatures from 5 to 50 H.P.
Engineering data sent promptly upon request from engineers, contractors, dealers, and distributors.
SCHNACKE, INC.
1016 E. Columbia St. Evansville, Ind.

NIBCO FITTINGS are accurately formed under tremendous pressure. THEY FIT! . . . that's why they make perfect joints quickly . . . joints that are stronger than the copper tube itself. Made in complete range of types and sizes. Write for Catalog 614.

NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

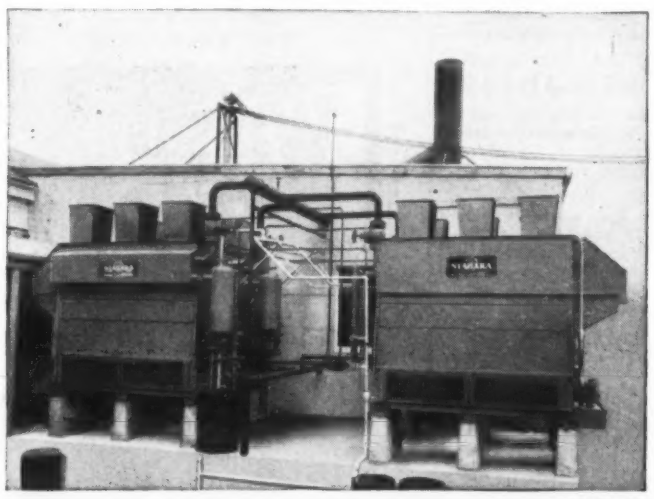
Says GASKET JOE
I GIVE ORCHIDS BY THE BASKETS TO THE BOYS WHO CHECK DOOR GASKETS

3-A
JARROW PRODUCTS
420 N. LA SALLE ST., CHICAGO 10, ILLINOIS

TO INCREASE PRODUCTION

● YOU Can Obtain Greater Refrigeration Capacity from your Present Compressor by using NIAGARA DUO-PASS AERO CONDENSER.

Write for Bulletin 91-AC and 103-AC.



PATENTED

This is possible because you use outdoor air as the cooling medium with the extra benefit of evaporative condensing! Condensing temperatures are lowered; condenser capacity is increased; head pressures are reduced —additional compressor capacity is the result.

Only the patented NIAGARA Duo-Pass makes this gain permanent because no other evaporative condenser lowers condensing temperatures to the point where deposits do not accumulate on condenser tubes. This does away with loss of time for cleaning and assures always full capacity.

NIAGARA BLOWER COMPANY
Over 30 Years of Service in Industrial Air Engineering
405 Lexington Ave., New York 17, N. Y.
Field Engineering Offices in Principal Cities

INDUSTRIAL COOLING HEATING • DRYING NIAGARA HUMIDIFYING • AIR ENGINEERING EQUPT.

Crandall Describes Heat Pump Results

(Continued from preceding page)

the outside temperature was as low as -10° for some time.

"This is really a comfort story," Mr. Crandall commented, "and, from the standpoint of inside temperature, is typical of the daily charts taken throughout the heating season."

Another chart was displayed to show the temperature of air entering and leaving the condenser while compressor and fan are operating. This chart revealed that the temperature of the air entering the first floor rooms averages 110°, and the air returning to the pump averages 69°.

"Velometer measurements at both the cold and hot air ducts indicated that there was 46,200 cu. ft. of air circulated, which is equivalent to 6.7 changes per hour during the time that the unit is in operation," Mr. Crandall reported.

In summarizing results from Oct. 1, 1945, to May 31, 1946 (see Table 1), Mr. Crandall pointed out that the unit was not operated during the summer of 1946, except for a few short periods, because change-over valves were not available.

"We estimate the cooling season would require approximately 720 hours' use of the compressor, plus about 1,260 hours additional use of the circulating fan," he said.

"This would mean a consumption of 1,692 KWH which, at 2 cents per KWH (the rate of which this unit is being served), would make summer cooling energy cost approximately $34. Adding this to the heating season's consumption makes a year-around energy cost of approximately $160, or $14.25 per month."

Results for the 1945-46 period are compared with results from Oct. 1, 1946, to March 10, 1947, in Table 2.

"You will note," Mr. Crandall stated, "that so far the present season shows an improved performance, which we expect will continue for the balance of the season. The equipment hasn't been changed in any manner, although the fan speed has been increased slightly this winter. The unit has carried some additional load . . . because the second floor bedroom has been in constant use, and heated by an open stairway."

Table 3 was presented to show a comparison of the estimated heat loss and the actual heat input for the 1945-46 season.

The monthly record of the pump is given by Table 4, and statistics on the monthly load factor by Table 5.

Commenting on Table 5, Mr. Crandall added that during the coldest day of the winter, when the temperature was -10° for about five hours and the average for the entire day was 2°, running time of the pump was 15.6 hours out of 24. Load factor, he noted, will of course vary with the size of the unit in comparison with the maximum heat loss of the house and outdoor temperature conditions.

"Adding the calculated kilowatt-hour consumption for the cooling season, and the operating time of both the compressor and the circulating fan," he continued, "we estimate that the summer consumption would be 1,692 KWH which, added to the operation during the heating season, would result in a load factor of 23.6%."

Table 1—Heat Pump Results

Oct. 1, 1945 to May 31, 1946

Average outside temperature	42.7°
Average inside temperature	74°
Total degree days	7,620
Total compressor kwh.	6,013
Total fan kwh.	344
Total kwh. used	6,357
Kwh. per degree day	.835
Compressor running time	1,630.68 hrs.
B.t.u. to first floor	49,592,000
B.t.u. to basement	28,896,000
Total B.t.u. to home	78,488,000
Total B.t.u. to electric input	21,714,000
Coefficient of performance	3.61
If compressor kwh. only is considered, coefficient of performance is	3.82

* * *

Table 2—Heat Pump Results

Oct. 1, 1945 to May 31, 1946 Compared With Oct. 1, 1946 to March 10, 1947

	Season of 1945-46	Season of 1946-47 to March 10
Average outside temperature	42.7°	39°
Average inside temperature	74°	74°
Total degree days (74° base)	7,620	5,649
Total kwh. used (compres. & fan)	6,357	4,530
Kwh. per deg. day	.835	.802
Coefficient of performance	3.61	3.77

Table 3—Comparison of Estimated Heat Loss with Actual for Season

Oct. 1, 1945 to May 31, 1946

Total kwh. used	6,357
Total degree days	7,620
Estimated B.t.u. heat loss at 11,472 B.t.u. per degree day	87,400,000
Actual heat input to home	78,488,000
B.t.u. input from other elec. use in home @ 6 kwh. per day	5,000,000
Total actual heat input to home	83,488,000
Excess of estimate over heat input	3,912,000 B.t.u.
Per cent excess of est. over heat input	4.69%

"There is a total of approximately 700 ft., in 100 ft. lengths, of ¾-in. copper tubing through which 'F-22' refrigerant is circulated," Mr. Crandall said in describing coil radiation capacity (see Table 6). "On the chart this is considered the primary radiation.

"The secondary radiation consists of ⅝-in. copper tubing 24 in. long, welded at right angles to the primary coils and spaced about 18 in. apart. The coils were buried at depths of from 3 to 6 ft. in three different trenches.

"At various periods through the winter there was water and ice surrounding part or all of the coils, but at no time was there any evidence that the coils were insufficient for the heat requirements of the house—on the contrary there was evidence that there was capacity beyond requirements.

(Continued on next page)

AFTER 17 YEARS OF RESEARCH

The NAT Corporation of Kansas City

The LAST WORD in Appearance and Performance

•

Finished Crackled Brown or Hammered Grey Baked Enamel

announces

THE NEW

NAT

(self contained)

AIR CONDITIONER

The Nat Air-conditioning Unit is the only one on the market so constructed as to be easily serviced.

The Answer to the Service-Man's Prayer

All working parts are accessible without having to tear down the cabinet. A saving of time and labor.

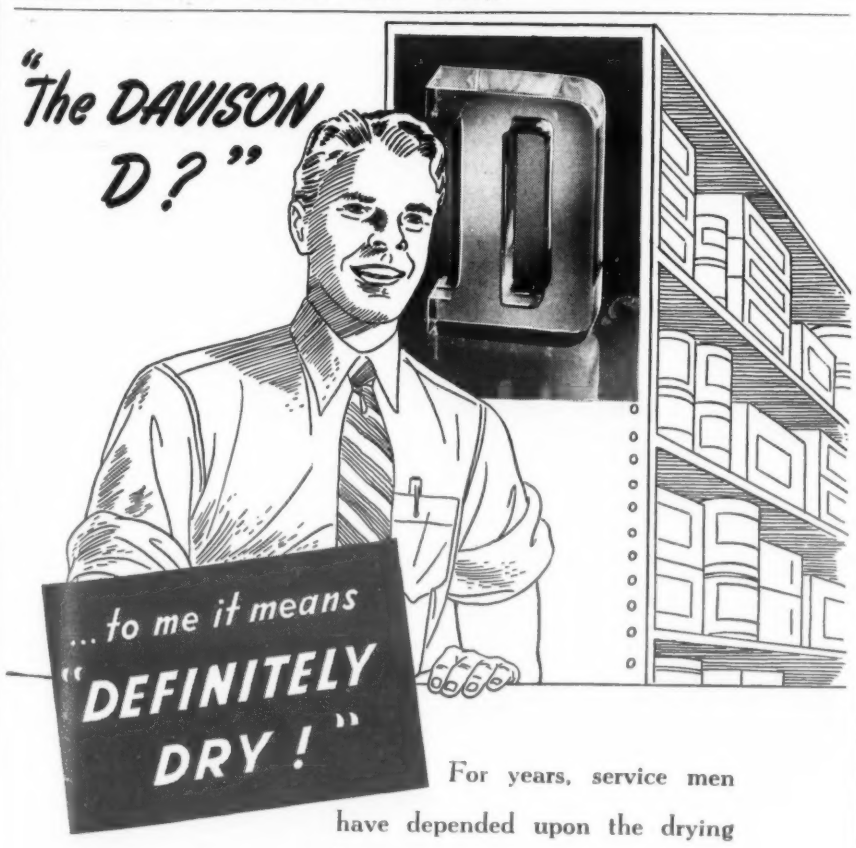
The NAT Unit comes in 3 sizes: 3.0, 4.2 and 5.4 Tons

Sold through exclusive dealers and distributors some territory still open — inquiries invited

The* NAT *Corporation

2710 McGee Trafficway • Phone HA. 1892 • KANSAS CITY, MISSOURI

The Nat Corporation also manufactures the NAT Suspended Gas-Fired Unit Heater



For years, service men have depended upon the drying agent in the can *with the familiar blue label* to solve moisture problems — speedily and surely.

Your jobber always has a supply of DAVISON Refrigeration Grade SILICA GEL for refilling . . . or in factory-charged dehydrators.

"LOOK FOR THE CAN WITH THE BLUE LABEL"

THE DAVISON CHEMICAL CORPORATION

Progress through Chemistry

BALTIMORE-3, MD.

PIONEERS AND DEVELOPERS OF SILICA GEL

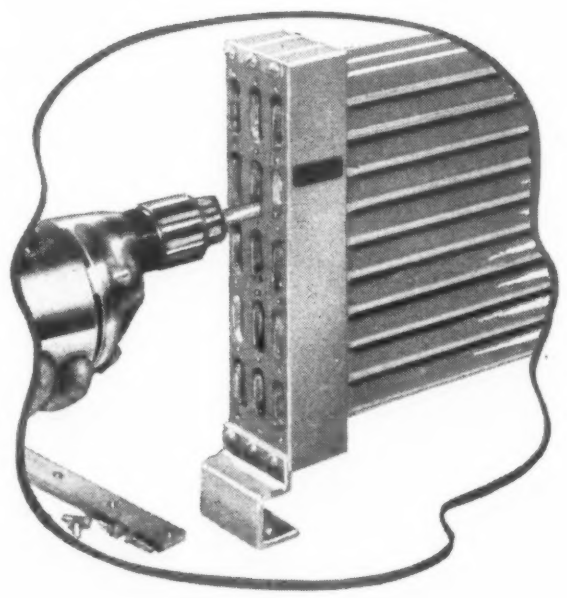
Canadian exclusive sales agents for DAVISON SILICA GEL:
CANADIAN INDUSTRIES LIMITED, General Chemicals Division

DOUBLE-TUBE COUNTER-FLOW **CLEANABLE** WATER-COOLED CONDENSERS

Unit pictured 5 H.P.

Seamless Copper Tubes
Brass Headers Machined and Brazed

HM condensers are more economical because they're cleanable!



Halstead & Mitchell condensers may be restored to original efficiency through the simple use of a power-driven cleaning tool that restores the copper water-tube surfaces to new condenser value

Combine this CLEANABLE feature with a true tube-within-a-tube counter-flow principle of operation and you have a unit which makes obsolete most old style water-cooled condensers.

Available from stock in standard sizes 1/2 to 10 H.P

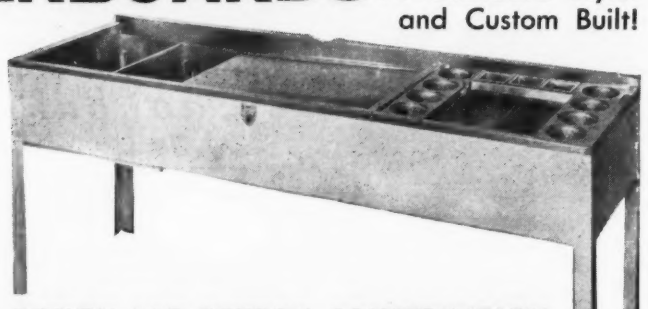
JOBBERS in all principal cities carry HM condensers in stock for immediate delivery.

HM Halstead & Mitchell

OFFICES: Bessemer Building, Pittsburgh 22, Pa.

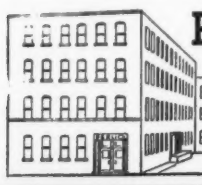
WORKBOARDS . . . Standard Styles and Custom Built!

Write for Bulletin No. 43



PRACTICAL DESIGN AND STURDY CONSTRUCTION PAY OFF IN BETTER EFFICIENCY - LONGER LIFE

Perlick Workboards are more economical behind the bar, because they conserve the barman's time, make him more efficient, and because they go on serving year after year, without trouble. All stainless steel. Sturdy! Many styles and sizes available for prompt delivery.



R. PERLICK BRASS CO.
3110 W. MEINECKE AVE.
MILWAUKEE 10, WIS.

ACME PRODUCTS

Freon Condensers
Dry-Ex Water Chillers
Evaporative Condensers
Forced Convection Units
Oil Separators
Liquid Receivers
Heat Exchangers
Pipe Coils
Hi-Peak Water Coolers
Flooded Water Coolers
Ammonia Condensers
Write for Catalog on any item

Continuously serving the refrigeration industry SINCE 1919

ACME INDUSTRIES, INC.
651 Mechanic St., Jackson, Mich.
REPRESENTATIVES IN PRINCIPAL CITIES—SEE YOUR TELEPHONE BOOK

Maximum EFFICIENCY • Minimum ATTENTION

Precision manufacture gives Larkin refrigeration products life-time top performance and lasting fortitude. Made by the originators of the patented Cross Fin Coil, Larkin is the recognized leader in precision manufacture of Larkin Humi-Temp Forced Convection Units — Bare Tube and Zinc Fused Steel Plate Coils — Air Conditioning Units — Instantaneous Water Coolers — Evaporative Condensers — and all other equipment factors used in dependable commercial and industrial refrigeration.

THE WATCH DOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS 519 MEMORIAL DRIVE • S•E• ATLANTA • GEORGIA

2 Charts Developed For Heat Pump Data

(Continued from preceding page)

"Although in this installation these coils, which delivered a maximum of approximately 60 B.t.u. per lineal foot, proved entirely adequate, it is evident that considerable research and experience will be necessary in order to determine the exact size, design, and type of ground coil for each soil condition."

At this point Mr. Crandall exhibited a heat pump calculation chart developed by Roy Thurman, director of the company's commercial appliance sales division. Knowing the heat loss per hour of the building to be heated, the sales engineer can from this chart give the prospect a quick estimate of the season's heating cost, it was claimed.

Next, he displayed a chart (see Table 7) intended to provide a quick method of estimating the approximate heat loss per hour in a residence.

"By its use as a supplement to the calculation chart," Mr. Crandall explained, "the salesman only needs to know the cubical content of the building to be heated and whether it is insulated either moderately or thoroughly or not at all. A more accurate heat loss figure may be determined by using the ASHVE method and probably should be done, at least with the early installations in any locality, especially in estimating the amount of earth coil needed, the compressor size, etc.

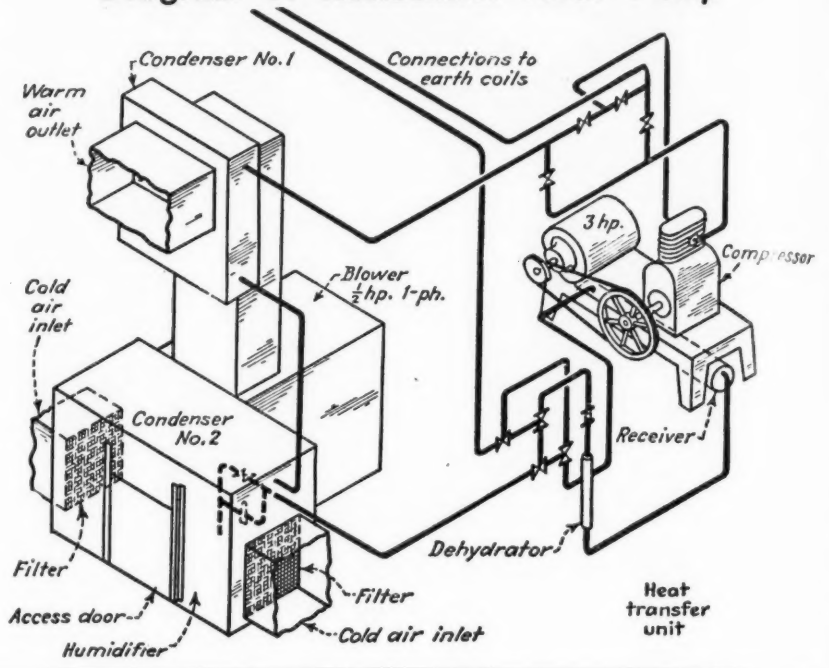
"Any consideration of the heat pump as a load building appliance should include some idea of its market potential . . .," Mr. Crandall went on. "A market analysis of the area served by our company may be interesting—even if it is not applicable nationally. This analysis covers five years. . . .

"The material cost only of the Webber unit was about $500. This may constitute a slim clue as to the cost of a unit of comparable size, produced on a commercial scale.

"Operating costs will have some effect on the number of units sold but we do not feel that this is a major point of sales resistance, considering the tangible and intangible advantages which the heat pump brings to the home.

"The first step of our analysis was to decide the class of home which could reasonably be considered as a heat pump prospect. We decided that it would be a home valued at $9,000 and up at 1947 prices.

Diagram of Residential Heat Pump



"New homes of this class, whether owner occupied or rented, we believe will be heat pump prospects. New-home rental prices will be adjusted, if necessary, to provide heat pump service which the renter will demand, but among existing homes the prospects will be confined chiefly to those that are owner occupied.

"According to the 1940 Census there are, in the area served by our company, approximately 8,550 owner occupied homes which, at today's price, would be valued at $9,000 and up. In addition the local building industry estimates that about 3,500 homes will be built per year, within our service area, for the next five years or longer and that 60% of these, or 10,500 will cost $9,000 and up. This gives a total of 11,355 heat pump prospects, including both existing and new homes.

"We believe it is conservative to expect that, of these prospects, 10% of the existing homes, or an average of 2% per year, and 25% of the new homes, or an average of 5% per year, will purchase a heat pump. This would mean 3,480 heat pump installations in the five year period, giving a saturation of 2½% of the then total residence customers.

"We estimate the year around operation of the heat pump in our locality will average about 9,000 KWH. Multiplying this by 3,480 units would add an annual increase of 31,320,000 KWH for heat pump service. This is equal to 17.4% of the total residence KWH sales in 1946. . . .

"In addition to the increase in kilowatt-hour sales, we are all interested in the effect of the heat pump on distribution and plant capacity.

"As far as we know, there is little or no data on this subject now, however, we can make an interesting observation on this question of demand from information recently given to us by Mr. McMicken, general sales manager of the Portland General Electric Co., in connection with the operation of approximately 30 houses, served by his company, equipped with resistance type central heating furnaces.

"These houses average about 10,400 cu. ft. each, with an average connected load per system of 16.4 KW. The maximum coincident demand of this group of furnaces was 9.5 KW per unit, while the coincident demand at the time of the system peak (Jan. 14, 1947) was 6.7 KW.

"From the standpoint of demand, it would seem reasonable to assume that the heat pump and the resistance type central furnace would be very similar, because both units deliver practically instant heat, when the thermostat calls for it, and neither of them have any appreciable storage capacity. Therefore, had these homes been equipped with heat pumps, having a coefficient of performance of four for instance, the maximum coincident demand would be in the order of 2.5 KW and the coincident demand at the time of system peak would have been about 1.7 KW per installation.

"If this assumption is correct, the effect of heat pump operation on system demand will not be serious—at least in relatively mild climates. Heat pump demand will, of course, differ in various localities because of climatic conditions, size of installations, performance coefficient, etc.

"Although it is perhaps natural for us to stress the load building potential of the heat pump for space heating and cooling, we should not overlook the load building potential as well as other advantages of the heat pump applied to water heating,

(Concluded on next page)

Table 4—Monthly Record of Heat Pump

	Average Outside Temperature	Average Inside Temperature	Degree Days	Total Kwh. Used	Kwh. Per Degree Day	Coefficient of Performance	Total M B.t.u. Input to Home	B.t.u. per Deg. Day Input
Oct. '45	51.4	73.0	671	418	.62	4.05	5,790	8,620
Nov. '45	42.0	73.0	935	815	.87	3.91	10,999	11,750
Dec. '45	23.7	73.0	1,525	1,459	.96	3.67	18,272	12,000
Jan. '46	28.2	73.8	1,415	1,435	1.01	3.43	16,852	11,900
Feb. '46	32.0	74.0	1,179	1,132	.96	3.36	12,983	11,000
Mar. '46	51.0	75.3	758	527	.70	3.68	6,626	8,730
Apr. '46	53.1	75.2	662	406	.61	3.49	4,814	7,280
May '46	59.1	74.4	475	165	.35	3.80	2,152	4,530
Av. or Total	42.7	74.0	7,620	6,357	.835	3.61	78,488	10,300

Table 5—Monthly Load Factor

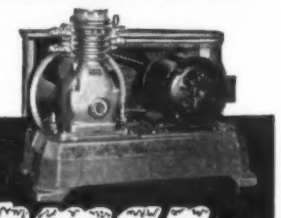
	Run Time	Load Factor
Oct. '45	138.00	18.5%
Nov. '45	268.50	37.3%
Dec. '45	373.30	50.2%
Jan. '46	343.07	46.1%
Feb. '46	253.46	37.6%
Mar. '46	119.42	16.1%
Apr. '46	94.20	13.1%
May '46	40.73	5.5%
243 Total	1,630.68	28.0%

Certified
BY A QUARTER CENTURY OF REFRIGERATION KNOW-HOW

Plan your automatic refrigeration installations for a triple advantage: Proved performance, low first cost, low maintenance cost. LIPMAN machines for dependable service in any field of commercial refrigeration are the result of more than a quarter century of manufacturing know-how. Let LIPMAN serve your needs profitably!

GENERAL REFRIGERATION DIVISION

Yates American Machine Co. Beloit, Wis.



Lipman
AUTOMATIC REFRIGERATION

ROTARY SEAL
REPLACEMENT UNITS
FOR REFRIGERATOR COMPRESSORS

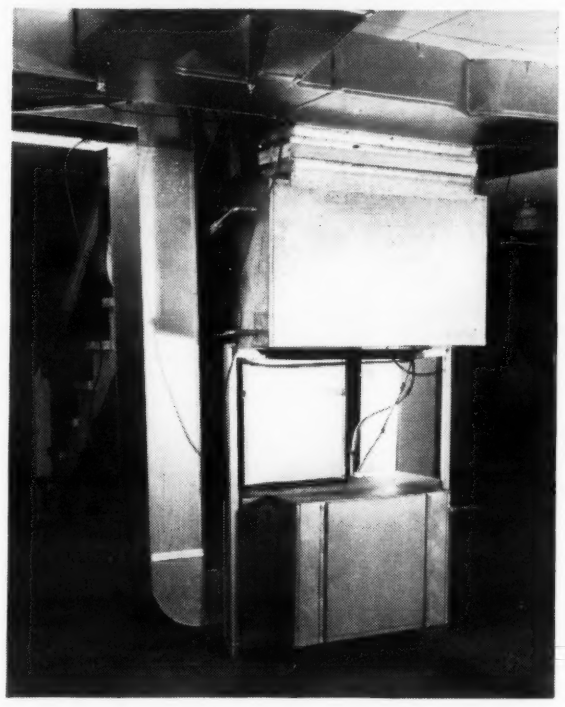
Point the Way to "SEALING with CERTAINTY"

BACKED BY THE MOST LIBERAL GUARANTEE ON THE MARKET!

STOP SHAFT LEAKS ROTARY SAFETY FIRST SEAL

ROTARY SEAL COMPANY
2020 N. LARRABEE ST., CHICAGO 14, ILL.
Canadian Office: 382 Victoria Ave., Montreal 6, Canada

Fig. 2—And Here's How It Looks from Front



Vertical duct in this front view of Webber heat pump is directly opposite one shown in Fig. 1, and comes from cold air outlet on first floor into bottom condenser housing. Rectangular ducts on ceiling carry hot air from condenser to first-floor registers.

Cites Heat Pump Water Heater Possibilities

(Concluded from preceding page)

especially in view of the low national water heater saturation after 15 or 20 years promotion on the part of the industry.

"If the manufacturer can produce a heat pump water heater at an installed price to the customer, not too far above the price of a resistance type heater of comparable hot water capacity, electric water heating will experience rapid growth in many sections of the country because, with a coefficient of 3 or 4, electric water heating cost will not only be competitive with other methods of water heating, but in many cases it will be less, and sufficiently less to justify the higher initial cost of the heat pump heater.

"The heat pump water heater will have a low demand and a splendid load factor yet it can operate unrestricted on the house service, therefore, will require less storage capacity than resistance heaters of comparable hot water capacity.

"It should reduce, if not eliminate, the necessity of off-peak water heating service and special rate provisions for water heating. It will save the investment, servicing and maintenance of separate meters and control equipment now required by off-peak water heater service—also the separate meter reading and billing of this service.

"The low kilowatt hour consumption of the heat pump water heater means, of course, that it will take three or maybe four units to equal the kilowatt-hour consumption of an average size resistance heater. However, the ability to provide electric hot water heating service at or below the cost of that service by competitive fuels should make it possible to sell even a higher ratio of heat pump water heaters.

"In addition to the load building value of the heat pump for space and/or water heating, we should not overlook its influence in stimulating the sale of electric ranges, automatic laundry equipment, dishwashers and other major electrical appliances. The extent of this influence is beyond calculation, however, it is safe to assume that in nearly every home, particularly new ones, equipped with a heat pump—most if not all of these appliances will be in use. In the case of new homes the heat pump and all of the other major appliances will undoubtedly be financed as part of the house cost.

"There is a definite challenge to the ingenuity and imagination of the utility's engineering and construction departments to meet such new problems in transmission and distribution as may be created by rapid load increases through the sale of heat pumps and other major appliances. This challenge should attract young engineers who may now be under the impression that there are no frontiers in the field of 60-cycle service.

"You may consider that interest in the development of the heat pump now is premature, when most utilities have all the load they can comfortably handle until new equipment is available, but we believe 'it is later than you think' and there are a number of reasons why the utilities should accelerate their interest in the development of the heat pump:

"First, it is probable that capacity will be available by the time there is any appreciable load growth from heat pumps.

"Second, there are many details related to design, construction, and application to be perfected before the heat pump is ready for marketing in all localities. This will take time but, meanwhile, there are thousands of simple applications, similar to the Webber house, from which much can be learned by both manufacturer and utility.

"Third, the public is eager for this service, particularly the new home builder, and it is in this market that we will probably get our biggest volume of heat pump business. Many new homes are in the planning stage now, and that is the time the builder decides on his heating equipment. Every new home equipped with some other type of heating equipment can be taken off our heat pump prospect list for several years to come.

"Fourth, in these times, when the manufacturer is all but buried with unfilled orders, we can hardly expect him to pay a great deal of attention to a new appliance unless he is pushed by the utility to do so.

"Much credit is due Mr. Philip Sporn and his associates for the leadership and pioneering work they have given to the development of the heat pump. It has undoubtedly stimulated a good deal of independent research by various utilities, all of which should be materially helpful to the industry's new Heat Pump Coordinating Committee which we understand has been formed for the purpose of correlating and developing heat pump research and development on a national level."

(During his talk, Mr. Crandall showed a picture of the first ground-to-air unit built by Terra Temp Co. in Indianapolis. He noted that this company has no connection with Indianapolis Light & Power Co.

(Questioned later, Mr. Crandall said that Mr. Webber had been granted a leave of absence from the utility to develop his unit and that he has applications for patents pending on the ground-coil phase. He said Terra Temp has taken an option on this unit and is now seeking to secure a factory so production can be started.

(Mr. Crandall explained that the installation in Mr. Webber's home had been underwritten by the utility as an industry project, and not with a view to manufacturing the unit.

(It is understood that numerous tests of the unit are being made for Terra Temp by Armour Research Institute in Chicago. The pump reportedly has been tested in many areas having different types of soil. It is said that the company is continuing to compile data for installation in any part of the country.)

Table 6—Coil Radiation Capacity

		Sq. Ft.
No. 1—4½ ft. deep	Primary	19.64
No. 2—3 ft. deep	Primary	19.64
	Secondary	10.8
4 ft. deep	Primary	19.64
	Secondary	10.8
No. 3—5 ft. deep	Primary	19.64
	Secondary	10.8
6 ft. deep	Primary	19.64
	Secondary	10.8
No. 4—5 ft. deep	Primary	19.64
6 ft. deep	Secondary	21.2
	Total	**182.24**

Maximum capacity air circulated first floor 46,200 cu. ft. per hour.

Maximum capacity temperature rise 118° − 69° = 49°.

Maximum B.t.u. = $\frac{46{,}200}{55} \times 49 = 41{,}200$ B.t.u. per hour.

$\frac{41{,}200}{182.24} = 226$ B.t.u. per sq. ft. coil per hour.

If primary radiation only is used B.t.u. per sq. ft. = 296 B.t.u. per sq. ft. per hour.

Table 7—Method of Estimating Approximate Heat Loss per Hour In Residential Buildings

Design Range Maximum Temp. Difference In Degrees	B.t.u. Required Per Hour Per Cu. Ft.* Thoroughly Insulated House	Moderately Insulated House	Standard Construction House
100	4.5	6.25	8.75
90	4.0	5.6	7.9
80	3.5	5.0	7.0
70	3.0	4.4	6.1
60	2.6	3.75	5.25
50	2.2	3.1	4.4
40	1.75	2.5	3.5
30	1.3	1.9	2.6

1. Thoroughly insulated house has storm doors and windows, insulated ceilings and side walls.

2. Moderately insulated house has storm doors and windows and ceiling insulation.

3. Standard construction has no special insulation of any kind.

*This should include basement.

FLORIST'S BOX

A Sturdy, Beautiful and Efficient Flower Refrigerator which any florist would be proud to own.

Model FL 6

Exterior: Stainless steel front with sunburst effect on top—radius ends. Aluminum sides. Interior: Black porcelain with aluminum floor. Fluorescent lighting. Step display. Finned top coil and pan. Pan and floor drain. 4″ efficient insulation. Length 6′ Width 4′ Height 6′ 8″.

Model FL 810

Length 8′ 10″ Width 4′ Height 6′ 8″. Also custom built to any size. Photographs sent on request.

Inquire about our complete line of Commercial Refrigeration equipment including Storage Boxes, Display Cases, Reach-Ins, Ice Cream Cabinets, Freezers, Dough Retarders, Bobtail Fountains, etc.

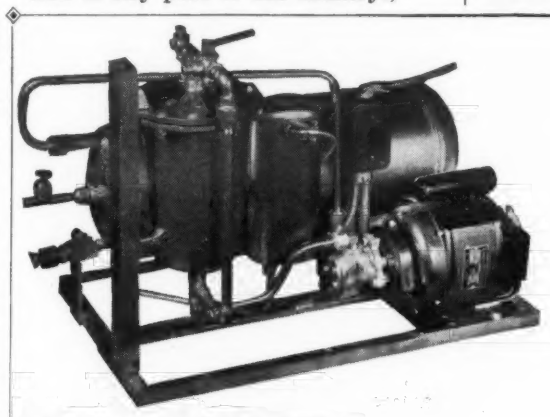
FRIGITEMP CORPORATION 931 Bergen Street, Brooklyn 16, N.Y. MAin 2-9093

NEW NO. 47 CATALOG
NOW OFF THE PRESS
WRITE FOR COPY ON YOUR LETTERHEAD TODAY

REFRIGERATION
AIR CONDITIONING
HEATING
PARTS
AND
SUPPLIES

THE SUPPLY HOUSE THAT SERVICE BUILT

SERVICE PARTS COMPANY
2511 LAKE STREET, MELROSE PARK, ILL.



Model "H" Carbonator

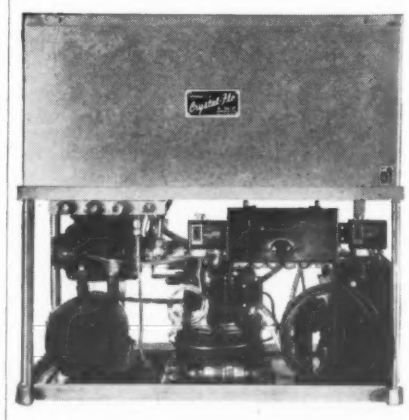
Dispenses highest quality carbonated water of unexcelled purity. Highest carbonation assured through unique process — stainless steel chamber. Convenient to install, economical in operation. No belts, pulleys, gears or lubrication.

Available Now!

CRYSTAL-FLO
Carbonating and Drink Dispensing Equipment

The Crystal-Flo system of dispensing carbonated water and soft drinks enables users to make better drinks at less cost, increase sales and assure larger profits. Crystal-Flo units have been proven in many years of service, yet today they offer many new and unique improvements and advantages.

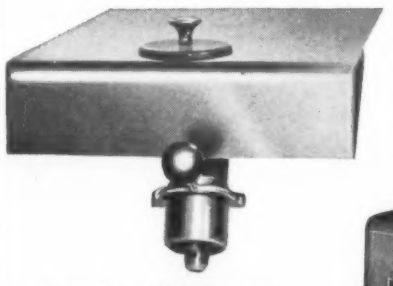
Crystal Flo equipment offers distributors an opportunity to sell the rich fountain and tavern market; to increase sales and profits with the finest units available today. Immediate delivery.



Model "R" Refrigerated Carbonator

The advanced engineering of the Model "H" plus the patented Kluecker method of refrigeration. Simultaneous refrigeration and carbonation assures unusually cold, highly sparkling drinks.

Under-Bar Dispenser



Mixes all soft drinks — dispenses in continuous flow — mixing in air. Stainless steel — saves valuable top-bar or counter space.

Top-Bar Dispenser

Mixes simultaneously — keeps syrup at same temperature as carbonated water — assures finer drinks every time.

Distributors Wanted

Many desirable distributor territories are still open. Write or wire for full information on all the profit-making advantages of the fast-selling Crystal-Flo line.

Club Soda System

Makes club soda automatically as used. Provides a tap for each bartender. Eliminates bottle handling — saves time and space. Makes finest soda water at less than 2c per gallon.

Amp Float Switch

Magnetic liquid level control for all liquids. Eliminates many parts of mechanical designs. Automatic, efficient, precision engineered and constructed.

AMP CORPORATION
Manufacturers of Crystal-Flo Equipment
2921 Locust Street • St. Louis 3, Missouri

MANUFACTURER WANTED

for absorption-type refrigerator, thoroughly tested. Principals only. Please address reply to our advertising agency:

Doremus & Co.
Attention C. W. M.
53 State Street
Boston 9, Mass.

SUPERIOR VALVE & FITTINGS COMPANY
Pittsburgh 26, Pennsylvania

VALVES, FITTINGS & ACCESSORIES
For All
• Refrigeration
and
• Air Conditioning
Systems

GENUINE MAYFLOWER
AIR CONDITIONERS

Air Conditioners Licensed Under U. S. Patents
No. 2,048,246
No. 2,055,528

MAYFLOWER PRODUCTS, INC.
13 S. 5th St., Richmond, Ind.

Bowen
REFRIGERATION SUPPLIES, INC.
Atlanta Jacksonville
Tampa Miami Charlotte
"The South's Largest Refrigeration Supply Jobber"

PURO ELECTRIC WATER COOLERS
BRANCHES IN PRINCIPAL CITIES
MAIN OFFICE
440 LAFAYETTE ST.
New York 3, N. Y.
PURO FILTER CORP. OF AMERICA
DRINKING WATER SPECIALISTS FOR 40 YEARS.

KRACK ENGINEERED
UNIT COOLERS
FIN COILS
AIR CONDITIONING
Refrigeration Appliances, Inc.
923 W. Lake St., Chicago 7, Ill.

PAR REFRIGERATION EQUIPMENT

Tops in
PERFORMANCE
ECONOMY and
EFFICIENCY
. . . By Comparison — You'll Buy PAR
Lynch Manufacturing Corporation
General Offices, Toledo 1 • Factory, Defiance, Ohio, U.S.A.

Every Motor Repair Shop
needs this fully-illustrated easy-to-read Motor Parts Catalog — form MU-40.
Send for your FREE copy today!

M46-9
Wagner Electric Corporation
6471 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS

PATENTS

Week of Feb. 4
(Continued)

AVAILABLE FOR LICENSING OR SALE

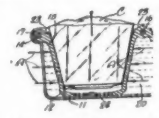
Pat. 1,864,640. ROTARY COMPRESSOR AND PUMP. Patented June 28, 1932. The working chambers of this compressor or pump are sealed and valve functions obtained without having to resort to rubbing metal-to-metal contact between the sides of the rotor or casing, rotating pistons or other parts which become worn or require lubrication. The compressing or pumping functions are performed by a rotating body of mercury or any other suitable liquid. The device may serve as a compressor or pump to handle either gases or liquids for refrigeration or other purposes. (Co-owner) Cameron A. Whitsett. Address correspondence to Brown, Jackson, Boettcher & Dienner, 1550 Monadnock Block, 53 West Jackson Blvd., Chicago 4, Ill. Group 35—61. Reg. No. 5,079.

Week of Feb. 11

2,415,446. ICE TRAY. Malcolm G. Shoemaker, Abington, Pa., assignor, by mesne assignments, to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Nov. 13, 1943, Serial No. 510,167. 15 Claims. (Cl. 62—108.5.)

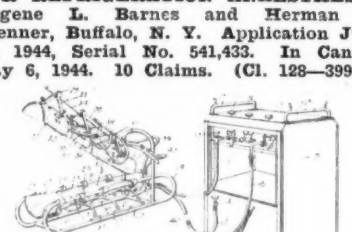
1. In a device of the character described, an ice tray member, a grid member cooperable with said tray member to define therein separate spaces to receive water to be frozen into ice bodies, said grid member having portions providing therein spaces noncommunicating with respect to the spaces first-named for reception of water to be frozen into ice masses separate and distinct from said ice bodies, and means on said grid portions for locking said ice masses therein.

2,415,451. ICE TRAY. Carl H. Synnestvedt, Bryn Athyn, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Nov. 11, 1943, Serial No. 509,888. 5 Claims. (Cl. 62—108.5.)



2. In an ice making device, a self-contained open top receptacle comprising outer and inner tray elements, said inner element being joined to the outer element so as to provide a sealed interspace and having a pliable-walled pocket depending in said space, and a freezable medium adapted to expand upon freezing confined within said space and about said pocket, said freezable medium having a freezing point below that of water and substantially filling said space whereby expansion forces within said body resulting from freezing of the said medium may react through said pliable wall to displace a previously frozen ice mass upwardly in said pocket.

2,415,455. APPLICATOR APPARATUS FOR REFRIGERATION ANAESTHESIA. Eugene L. Barnes and Herman A. Brenner, Buffalo, N. Y. Application June 21, 1944, Serial No. 541,433. In Canada May 6, 1944. 10 Claims. (Cl. 128—399.)

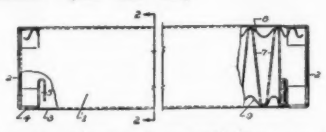


7. In anaesthesia refrigerating apparatus, a refrigerant applicator comprising a plurality of shaped substantially rigid, thin metal plates flexibly connected together and designed to be disposed in engagement with a predetermined portion of the body for cooling the later, one face of said plates being designed to contact said body portion, the opposite face having tubular conduit means, for receiving a refrigerant, integrally secured thereto and extending over selected substantial areas thereof, to cool them, and flexible tubular means connecting said tubular means between said plates, whereby said plates may be caused to move relatively to one another and to engage varied contours of the body in intimate contact.

2,415,473. SNAP ACTING THERMOSTAT. Raymond L. Dougherty, Detroit, Mich., assignor to W. M. Chace Co., Detroit, Mich., a corporation of Michigan. Application May 21, 1943, Serial No. 487,898. 14 Claims. (Cl. 200—138.)

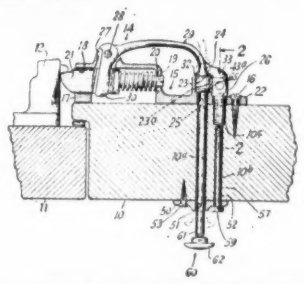
1. A thermostatic control comprising a member of thermostatic laminated metal a portion of which is confined against free change of shape thereby setting up internal stresses due to temperature change whereby said member abruptly reverses its curvature at a predetermined temperature and a second member of laminated thermostatic metal joined thereto to form an extension of said first member, said members having their high and low expansion laminae in reversed positions whereby the deflection of one of the members due to temperature change is compensated by a reverse deflection of the other member until said first member abruptly reverses its curvature, said members being constructed and arranged whereby for the same temperature change below the temperature at which the one element abruptly changes its curvature said members deflect in opposite directions in substantially equal amounts.

2,415,579. AIR FILTER CELL. Verner Dahlman, Louisville, Ky., assignor to American Air Filter Co., Inc., Louisville, Ky., a corporation of Delaware. Application April 7, 1944, Serial No. 529,977. 5 Claims. (Cl. 183—71.)



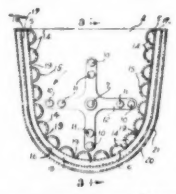
1. An air filter cell comprising: an open faced frame having peripheral side and end walls with face flanges extending from said walls inwardly across the margins of each face of the cell, the end wall flanges along one face of the frame being extended reversely within the cell to provide U-shaped sealing and securing troughs at each end of that face of the cell; sealing felts extending along the inner face of each side wall between troughs; a flexible deformable filter medium extending in corrugated fashion from one sealing trough to the other with its straight end edges sealed in the troughs and its corrugated side edges sealed by the felt; and a relatively coarse wire screen extending in corrugated fashion along each face of the frame between its end walls, the corrugations of the screen being of relatively shallow amplitude in relation to the amplitude of the filter medium corrugations and the valleys of the inner face of the screen being positioned to receive the crests of the filter medium and engage them substantially throughout their length so as to hold the crests in spaced relationship and support the corrugations of the filter medium against displacement.

2,415,587. LOCK FOR REFRIGERATOR DOORS. Alfred H. Groeger, New Hyde Park, N. Y., assignor to Kason Hardware Corp., Brooklyn, N. Y. Application June 9, 1944, Serial No. 539,432. 11 Claims. (Cl. 292—173.)



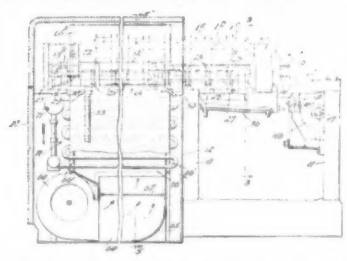
1. A refrigerator door lock comprising a casing, a spring-pressed latch on said casing, means to retract said latch, a member releasably attached to said casing and having an opening, said retracting means having an opening registering with the opening in said member.

2,415,711. REFRIGERATED DOUGH MIXER. Merlin A. Sticelber, Kansas City, Mo., assignor to Quik-Seal, Inc., a corporation of Missouri. Application May 3, 1943, Serial No. 485,412. 17 Claims. (Cl. 62—1.)



1. In a mixer, a mixing chamber having an agitator therein, said chamber having a wall adjacent the path of movement of said agitator, cooling means for said wall comprising cooling conduits on the inner face thereof providing resistance to the movement of the material agitated due to said agitator.

2,415,677. APPARATUS FOR COOLING CONTAINERS. James F. Earp, Detroit, Mich., assignor to The American Paper Bottle Co., Toledo, Ohio, a corporation of Ohio. Application Oct. 2, 1940, Serial No. 359,440. 10 Claims. (Cl. 62—102.)



2. Container cooling means comprising a casing having horizontally spaced ports through which containers may be introduced and discharged, respectively, means positioned toward the top of the casing for moving containers along a predetermined substantially horizontal pathway from the port of introduction to the port of discharge, a blower within the casing and at the bottom thereof, and means guiding the output of the blower upwardly centrally of the casing, over the container moving means and against the top of the casing, said means including spaced vertical walls parallel to the casing side walls and defining with the casing walls lateral downtakes communicating with the blower intake.

AVAILABLE FOR LICENSING OR SALE

Pat. 2,225,398. CONSTRUCTION OF VENTILATING FANS. Patented Dec. 17, 1940. (Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757.) This patent covers the incorporation in the construction of ventilating fan and blower housings of sound filters for the reduction of noise. It shows a double walled fan housing having an air space between the walls with divisional walls dividing the space into a series of cells. The inner double wall section is provided with openings communicating with each of the cells so that each cell becomes a resonator to reduce noise generated by the fan. Other modifications of the invention are shown. (Owner) Clyde M. Hamblin, 1429 Iris St., N. W., Washington 12, D. C. Group 35—64. Reg. No. 5,096.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $2.50 per insertion. Limit 50 words.

RATES for all other classifications $5.00 per insertion. Limit 50 words.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

POSITIONS WANTED

MARRIED MAN, age 36, with family desires position with progressive refrigeration or air conditioning firm in a technical capacity. Have thorough knowledge acquired through technical training school and actual experience. Well qualified for parts man, catalogue work or sales department. With additional training would make good factory representative. BOX 2315, Air Conditioning & Refrigeration News.

EXECUTIVE TYPE sales engineer, age 43, graduate engineer educated both Ga. Tech and M.I.T. Over ten years sales experience southern states selling instruments and controls to Industrials, Utilities, Refrigeration jobbers, etc. Large southern territory preferred. Will represent nationally recognized manufacturer only. BOX 2318, Air Conditioning & Refrigeration News.

APPLICATION SALES engineer—BSEE '40; G-E test; ASRE, ASEE: young; married; refrigeration and air conditioning sales, application and installation experience; now engineering dept. head of electrical and refrigeration distributor; fluent English and Spanish. Desires stable position in California. Salary and commission basis about $6,000. BOX 2321, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER, 41, with outstanding 14 year record. Capable of assuming responsibility for product improvement or new product program. Versed in design, research and application problems. Three patents granted on refrigeration controls. Connection with future wanted in Southwestern United States. BOX 2322, Air Conditioning & Refrigeration News.

I HAVE had 18 years experience in installation and servicing air conditioning commercial refrigeration. I am 38 years old, married and have one child. A-1 references. BOX 2325, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

GRAND OPPORTUNITY in the Land of Enchantment for three experienced refrigerator service men who want to earn more money in a perfect climate where the sun shines all year round. Only qualified service men need apply. Give complete details of your experience. D. E. McComas, HEASTON-McCALLISTER CO., Albuquerque, New Mexico.

WANTED—EXPERIENCED refrigeration countermen. Good opportunity for advancement. Apply in own handwriting, stating jobbing and any other experience, education, and starting salary required. Applications will be treated strictly confidentially. J. M. OBERC, INC., 904 W. Baltimore, Detroit 2, Mich.

SERVICE MANAGER: Large exclusive commercial sales and service organization requires the services of a competent service manager on a full charge basis. Service area is in the Los Angeles metropolitan area. Write a summary of your experience, past earning capacity and references. Address BOX 2317, Air Conditioning & Refrigeration News.

CHIEF DRAFTSMAN and senior layout draftsman with large commercial manufacturer in Middle West. Experience in domestic or commercial cabinet construction. Knowledge of refrigeration helpful but not necessary. Excellent opportunities for advancement. Give full details of experience and state salary desired. BOX 2324, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED ICE cream coin operated vending machines. New or used—any quantity cooled by dry ice or electric refrigeration. If available contact REFRIGERATION SPECIALTIES, INC., 721 Flushing Ave., Brooklyn 6, N. Y. EVergreen 4-0311.

EQUIPMENT FOR SALE

MOTORS AND condensing units—available at once—⅛-¼-⅓-½ Universal condensing units with or without motors. Special—six hole ice-cream cabinets with ¼ hp. Copeland units less motors $225. Also beverage coolers, beer equipment, stainless steel reach-in freezers. ALBROD CORP., 319 West 48th St., New York City 19, CI 6-9100.

20 UNITS ARMY surplus used for cooling radar tubes. Suitable for air conditioning units, unit heaters. Radiator 28 inches square, one HP. Ilg blower. Ingersoll-Rand moto pump. Cost Government $950.00. Complete with thermostatic controls, thermometer, $175.00 shipping weight 1000 pounds. ALL OFFICE MACHINES CO., 4636 W. Washington, Chicago, Ill.

IMMEDIATE DELIVERY—new air conditioning equipment. Weathermakers complete with motor, "Freon" coil, etc. 2 ton to 25 ton. SWSI, DWDI, and twin centrifugal blowers, propeller fans, heating and cooling coils, evaporative condensers, self-contained air conditioning units, condensing units. CONTROLDTEMP CORP., 236 Butler St., Brooklyn 17, N. Y.

CONDENSING UNITS (Genuine) ¼ and ⅓-hp. complete. Write for particulars and prices. Good quantities available. DRAFT-MASTER REFRIGERATION, INC. Designers-Manufacturers, 1703-5 W. Baltimore St., Baltimore 23, Md. GIlmor 2185—EDmondson 4542.

FOR SALE—AC motors ½ to 3 hp. single and 3 phase, list price. Immediate delivery. EDISON COOLING CORP., 310 E. 149th St., Bronx 51, N. Y.

BEER DISPENSING equipment—direct draw systems, 3-4-6 keg capacity. Beverage coolers, beer dispensers for air-duct and Temprite systems. Beer pumps. Immediate deliveries. Dealers wanted for New Jersey, New York and Pennsylvania. EXCELSIOR MACHINE CO., 2601 Kutztown Road, Reading, Pa.

QUALITY BOBTAIL fountains; reach-ins, walk-in boxes—wood, metal; dough retarders; double duty cases—stainless steel, porcelain; dairy, florist, bakery cases; ice cream hardening cabinets; thermopane frozen food cases; milk, sandwich coolers; stainless steel back bars; with machines. Equipment made to special order. FRIGITEMP CORP., 931 Bergen St., Brooklyn 16. MA 2-9093.

FOR SALE: 1—6 x 8 ammonia compressor. 2—6 x 6 ammonia compressors. 3—20 HP motors with starters, V-belt drives. 2—shell and tube condensers. 1—shell and tube brine cooler. All equipment in A-1 condition. HOTEL KANSAN, Topeka, Kan.

1000 MOTORS, FOR sale, from stock ⅝ hp.—3425 RPM—3 ph/230 V. (Underrated—easily equal to ¾ hp.) Ballbearing, for vertical or horizontal. Enclosed Fr. ¾ in. shaft. $36 each. This rugged motor cannot burn out. (Glass insulated wire coils.) MODERN SUPPLY CO., 206 Fulton St., New York 7—CO 7-0100.

ONE (1) GENERAL Electric condensing unit, serial no. CM123K382, comprised of 40 HP 220V-60-3 PH motor, eight cylinder compressor, condenser, motor starter, drive, belt guard, and base. Unit has been operated three air conditioning seasons and is to be replaced by unit of greater capacity. REFRIGERATION SERVICE SHOP, INC., Dayton 2, Ohio.

CAPILLARY TUBES. Part No. 1140. One model fits all household units up to and including ⅓ HP SO2, Methyl, "Freon." Has proper inside diameter and length, thus allowing unit to operate satisfactory without high head pressure. $1.10 each. Write for bulletin No. 14 listing parts for sealed units. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

FLOAT REPLACEMENTS. For replacing defective high side floats on all household units. Regular charging connection, capillary tube setup, internal strainer and exact mounting plate. Part #2000-Westinghouse (4 hole plate), and #2010 (3 hole plate): Part #2020-Gibson Part #2030-General Electric (DR-1 & DR-2). Part #2040-For general replacement (undrilled plate). $6.75 each. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56.

SEALED CROSLEY TERMINALS. Installed from the outside in a few minutes without opening the compressor. Corrects leaky terminals on all Crosley "F-12" units. Set of three $6.75 (Part No. 1020). Installation tool $1.65. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

40 G. E. MOTORS 32 volt D.C. 1725 RPM ¼ HP new in original package—$34.85 each. Delivery from stock. 44 cubic foot —4 door United reachin refrigerators with blower coil and ⅓ HP Mills condensing units $460.00. TALBERT-THOMAS CO., 2457 South Michigan Ave., Chicago, Ill.

FAN BLADES—immediate delivery—Torrington B series, size 24"—30"—36"—48"—40 pitch, unpainted ¾" bore, all new in original containers. VALLEY FAN MFG. CO., Box 206, Fort Valley, Ga.

SECTIONAL WALK-IN boxes; walkin-reachin boxes; condensing units ¼ to 10 HP; blower coils; all metal reachin boxes, 32-40-60-80 cu. ft., solid and glass doors; 6' beverage coolers unitized; 6' all stainless steel beverage coolers remote. VIKING SALES CORPORATION, 1481 West Washington Blvd., Los Angeles, Calif.

LARGE QUANTITIES of handy flux, made by Handy & Harman, packed in 5, 3½, & 3¼ lb. Glass jars. Standard flux for brazing stainless steel, silver solder, steel, monel, nickel or any type low temperature brazing. Excellent condition. Guaranteed .38¢ lb. FOB Houston. Immediate delivery. M. E. WILLIAMS & CO., 1818 Prospect, Houston, Tex.

WANTED GRUNOW units & compressors—any condition. BOX 2281, Air Conditioning & Refrigeration News.

FOR SALE—immediate delivery—copper tubing. ⅜" x .035 W x .305 LD—up to 50,000 lbs.—50 ft. coils sealed ends. ½" x .35W x .430ID—up to 50,000 lbs.—50 ft. coils open ends—also ⅛"—¼"—⅜"—¼" 5/16"—7/16". F.O.B. Phila. Pa. BOX 2320, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

LOW COST automatic fire extinguisher. Exclusive county rights available for the Marvel automatic Kill-Fyr extinguisher. Component parts approved. Easy sales, good profits. Write for descriptive circular and facts from satisfied users. KILL-FYR MANUFACTURING CO., Dept. R-88, Camden, N. J.

BUSINESS OPPORTUNITIES

ATTENTION INDUSTRIALISTS! South-central Missouri community (population 1500). Desires to obtain a plant or factory for its locality. Excellent transportation facilities. 115 miles Southwest of St. Louis. Good labor supply. Both men and women. Building fund available. NEWBURG DEVELOPING CO., INC. T. J. ROEMER, SEC., Newburg, Mo.

A REFRIGERATION sales & service business, house and forty acres of land, with small house on, which has been used as summer home, for sale in Northern Wisconsin city. Will sell all or part. BOX 2323, Air Conditioning & Refrigeration News.

Servicing Truck Refrigeration Units

Editor's Note: Actual installation of truck plates and suggestions for running the refrigerant tubing are described in this instalment of the series which discusses all phases of installing and servicing truck refrigeration systems using hold-over plates. The series was prepared with the assistance of Kold-Hold Mfg. Co.

Instalment No. 30

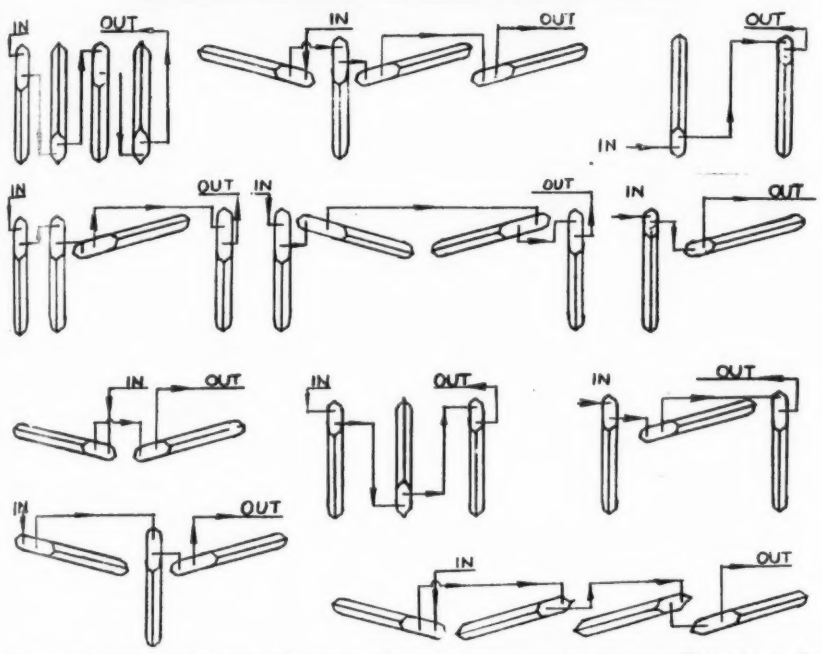


Fig. 6—Many variations of truck plate arrangements are possible, depending upon the requirements of the job and the design of the truck body.

* * *

Installing Plates

When installing or replacing a truck plate it may be advisable to screw the brass or steel fittings into the plate openings before the plate is mounted in the truck body. If this is done the flare or thread should be protected by a nut and flare bonnet or cap until the connecting tubing or pipe is installed.

The plates should not be left unplugged or open for any length of time because moisture may accumulate in the coils of the plates. Moisture in a refrigeration system always causes trouble. If the complete run of tubing or piping is not completed at noon hours, the open ends should be plugged. Do not use waste, however.

Where the refrigerant tubing enters the interior of the truck body from the condensing unit or the make-and-break valves, sealed entrance holes should be provided to prevent the entrance of air or moisture around these openings. Fig. 7 shows one method of sealing these openings.

A short length of standard automobile radiator hose is first inserted in the hole in the floor of the body. The hose should extend about ¼ to ½ in. beyond the opening. The hose should have about 1/16 in. greater O.D. than the hole and the I.D. of the hose should be about ⅜ in. greater than the O.D. of the pipe or tubing. After the pipe or tubing is in place, the space between the tubing and threaded joints in piping or tubing connections should be sealed with a standard refrigerant line sealer. Ordinary pipe compound must not be used. For ammonia pipe joints freshly mixed litharge and glycerin may be employed.

Running the Tubing

Regardless of the number of position of the truck plates in a body, the general plan of running the tubing is always the same—from the receiver of the condensing unit through a liquid line dryer to the plant half of the make-and-break valve. Thence through the truck half of the make-and-break valve through the heat exchanger to the expansion valve.

From the expansion valve the refrigerant flows in and out of the series of plates (the number of plates which can be served by one expansion valve will be discussed later) and finally to the suction side of the heat exchanger. The refrigerant gas flows from the heat exchanger through the make-and-break valve to the suction port of the compressor.

In installations where the condensing unit is mounted on the truck there are, of course, no make-and-break valves.

The tubing should be run vertically or horizontally without bends or sags and should be supported by clips at least every 18 in. Bulb of the expansion valve should be clamped to a horizontal suction line between the outlet of the last plate served by the expansion valve and the suction inlet of the heat exchanger. There should be no sags or traps in the suction line where the bulb is clamped.

The bulb should not be allowed to touch a refrigerant line other than the one to which it is clamped, and the capillary should not touch refrigerant lines between the bulb and the expansion valve. If contact were made with other lines, the expansion valve would not function properly.

All valves, tubes, capillaries, dryers, sight glasses, and heat exchangers should be firmly fastened to the truck body to prevent any strain on the refrigerant lines.

Bulb Location

The suction line from the last plate to the heat exchanger must be at least 3 ft. long, preferably from 7 ft. to 20 ft. in length. Bulb of the expansion valve should be at least 2 ft. ahead of the heat exchanger and preferably 6 ft. from the outlet fitting of the last plate. The bulb should never be closer than 1 ft. from the last plate.

Some installations involving several plates employ two expansion valves. With this arrangement both suction lines are teed into a single heat exchanger. It is then necessary to install the heat exchanger at a level below that of the suction lines where the bulbs are attached. The heat exchanger's being at a lower level keeps the refrigerant on one side of the system from interfering with the valve action on the other side.

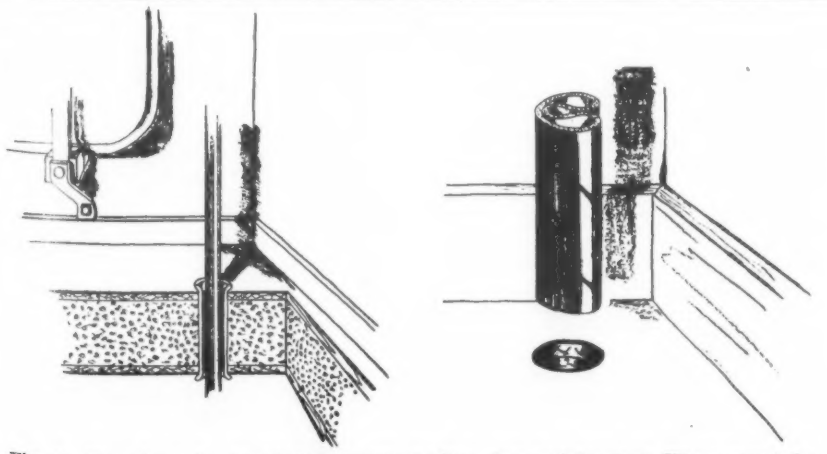


Fig. 7—Openings in insulated truck bodies for refrigerant lines must be sealed. The method shown here employs a length of automobile radiator hose with a standard line sealer filled in between the tubing and the hose.

Andover Kent Aviation Corp. Subsidiary Merges With Plastics Division

NEW BRUNSWICK, N. J.—The plant and processes of the Plastics Division of Andover Kent Aviation Corp. have been merged with the facilities of the Rodic Rubber Corp. of New Brunswick, a wholly owned subsidiary, John J. Brooks, president of both companies, announced.

During the war Andover Kent developed a low pressure plastic molding process now extensively used in electronic equipment manufacture and consumer products such as "Sav-Ice" buckets. Rodic Rubber Corp., for 20 years manufacturer of mechanical rubber goods, have been identified also with the production of sheeting and molded articles of polyvinyl resins.

This consolidation is indicative of a trend in the plastics field to broaden the scope of manufacture by including many types of plastic processes under one management.

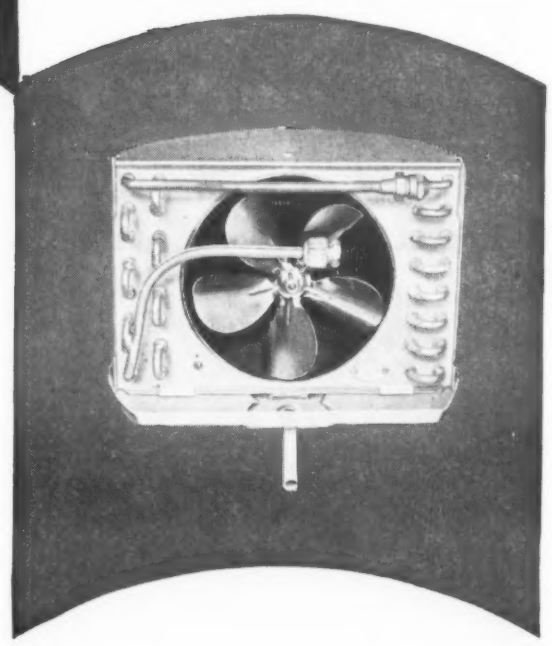
AIR CONDITIONING
condensers and coolers designed and built FAST
We design, build, retube or rebuild quickly any unit with tubes, standard or special, for Freon, ammonia, CO2. Materials on hand for prompt delivery. Emergency maintenance work 24 hours a day, anywhere.
Condenser Service & Engineering Co., Inc.
88 River Street, Hoboken, N. J.
Phone HOboken 3-4425. After 6 P. M. or Sundays, HOboken 3-4428

MARSH
Pressure Gauges
Dial Thermometers
★The gauge with the Recalibrator
Ask for this New Refrigeration Booklet
JAS. P. MARSH CORP.
2061 Southport Ave., Chicago 14, Ill.

SAVE YOUR TIME
BUY BY MAIL
New England dealer writes:
"If it had not been for your fast and efficient work in filling my needs, my business would still be just one man trying to make a living.
"Instead, thanks to you, we are a company of many satisfied customers and accounts."
Air Conditioning and Refrigeration
Parts - Tools - Supplies
Shop Equipment
Request Catalog on Your Letterhead
AIRO SUPPLY CO. INC.
SERVICE COVERS THE NATION
2732 N. ASHLAND
CHICAGO 14, ILL.
Dept. B.

The New CURVETTE by KRAMER

COMPACT
Fan and motor are located out of sight, out of the way, inside the curve of the coils.
ATTENTION-FREE
Motor is permanently lubricated.
ACCESSIBLE
All connections are easily reached.



GOOD-LOOKING
Note the pleasing appearance of this neatly curved semi-circular unit.
WELL-MADE
Tubes are copper; fins and framework are aluminum.
EFFICIENT
Radial airflow assures uniform refrigerator temperatures.
LOW PRICE
Due to specialized, quantity production.
PROMPT DELIVERY

FOR BEVERAGE COUNTERS, FOOD CHESTS, REACH-IN REFRIGERATORS, etc.

KRAMER TRENTON CO. Trenton 5, New Jersey 20-N

USE Superior V-BELTS-
• AS ORIGINAL EQUIPMENT
• FOR ALL REPLACEMENTS
Superior in Quality as well as name
SUPERIOR RUBBER PRODUCTS MFG. CO.
OFFICES—4041 RIDGE AVE., PHILADELPHIA 29, PA.
PLANTS IN PHILADELPHIA, PA. AND EGG HARBOR, N. J.

A MASTERPIECE in Thirst-quenching Convenience
OASIS ELECTRIC WATER COOLERS
You're always Sure with an Oasis-built by Ebco, pioneers in the electric water cooler field.
The EBCO Mfg. Co.
401 W. Town St.
Columbus 18, Ohio

First Western Exposition Opens April 25--

(Concluded from Page 1, Column 3)

educational director of the society, speak at an educational session Friday.

An open meeting is scheduled for Saturday morning at which Dr. Walter O. Walker, research director for manufacturing at the Ansul Chemical Co., and other speakers whose names were not available in time for publication will address convention visitors.

The new executive board and officers for the California Association will be chosen Saturday afternoon and announced to the membership on Sunday morning, according to the program.

At 7:30 p.m. Saturday, the first annual dinner-dance will be held in the Hilton's Marine Room.

Program for the ladies will include a visit to a moving picture studio, a trip to Catalina Island, and a tour of Knotts berry place, San Juan Capistrano mission, and Laguna Beach.

Combined program for the exposition and convention follows:

Friday, April 25

10 a.m. to 6 p.m.—Registration and reception. Hilton hotel. Issuance of badges and programs.

1:30 p. m.—Men's tour of Naval Drydocks and U. S. battleship. Ladies tour of southern California, including a visit to a major moving picture studio.

2 p.m.—C.A.R.S.E.S. executive board and chapter delegates meeting. Hilton hotel. Nominating committee to meet following business session.

4:30 p.m.—Educational session. Hilton hotel. Open to all refrigeration people. Speaker: Paul Reed, National Educational Director.

7:30 p.m.—Ribbon cutting ceremony, opening exposition. Main floor, Municipal Auditorium. All refrigeration people are welcome. Admittance by badge.

7:30 to 9 p.m.—Registration, foyer of Municipal Auditorium.

Saturday, April 26

9 a.m. to 6 p.m.—Registration and reception. Hilton hotel.

9 a.m.—Ladies Catalina Island tour leaves Hilton hotel.

9:30 a.m.—Open meeting. Concert Hall, Municipal Auditorium. Prominent speakers including Dr. Walker of Ansul Chemical Co. at 11:30 a.m. All refrigeration people invited.

1 p.m.—Exposition opens. All refrigeration people invited. Admittance by badge.

2 p.m.—C.A.R.S.E.S. electors to elect executive board. Following election the new board will meet to choose officers.

7:30 p.m.—First Annual Dinner-Dance. Marine Room, Hilton hotel. Admittance by ticket only. Informal.

Sunday, April 27

9 a.m.—C.A.R.S.E.S. meeting. Hilton hotel. Introduction of newly elected officers.

10 a.m.—Ladies tour of Knotts berry place (luncheon). San Juan Capastrano mission and Laguna Beach (tea on lawn of Art Gallery).

10:30 a.m.—Registration in foyer of Municipal Auditorium. Exposition open. All refrigeration people and public invited. Admittance by ticket or badge.

6:30 p.m.—Exposition closes.

LIST OF EXHIBITORS

A list of exhibitors at the exposition, as of April 3, follows:

Pacific Lumber Co.; Kurt Rose (manufacturer's agent); Spir-O-Freeze; General Controls Co. (Los Angeles office); Ebco Water Coolers; Refrigeration Equipment Wholesalers Association; Denny Brothers; Aero Refrigeration; Refrigeration Service Engineers Society; California Association Refrigeration Service Engineers Society.

Refrigeration Corp. of America; Nielson Equipment Co.; Worthington Pump & Machinery Corp.; Orley (California) Freezers; Glacier Locker Plants (demonstrations); Coldew; Ralph Wescott Co.; U. S. Grant Supply Co.; Russell Sales; Weber Showcase & Equipment Co.

Nash-Kelvinator Corp.; Imperial Brass Mfg. Co.; Willis Refrigeration (Coldspot replacement); Perfecold; Frostaire Duplex; Van D. Clothier (manufacturer's agent); Universal Freezers; Servel, Inc.; Slaegel Sales (manufacturer's agent); Ultra Cold Freezers.

Frigidaire Div., General Motors Corp.; Air Conditioning & Refrigeration News; A. & W. Sheet Metal (soda fountains); Royal Refrigeration Co.; Handy Harmon Co.; Metrex Valve Co.; Hal Clay (manufacturer's agent).

Temprite

SODA FOUNTAIN AND BEVERAGE COOLERS

INSTANTANEOUS

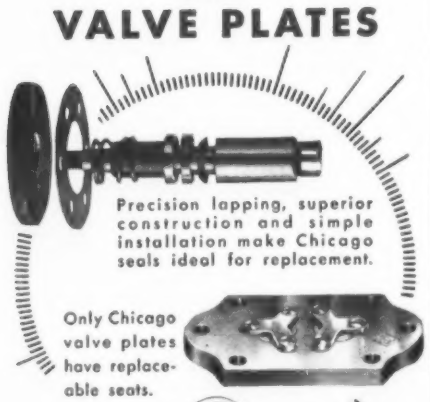
● Patented Temprite principle of direct heat transfer guarantees top efficiency, accurate temperature control. Even during peak rush periods, unit will deliver perfectly cooled liquids. 18-8 corrosion-resistant stainless steel coils safely handle all carbonated or non-carbonated beverages. Six models to serve either 1, 2 or 3 different beverages.

TEMPRITE PRODUCTS CORP.

43 PIQUETTE AVE. • DETROIT 2, MICHIGAN

PLAYSAFE

USE CHICAGO SEALS and VALVE PLATES

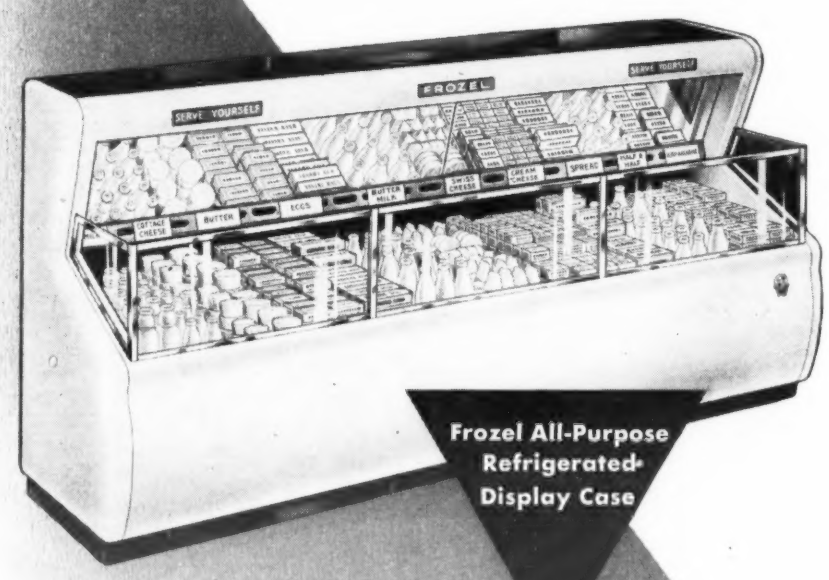

Precision lapping, superior construction and simple installation make Chicago seals ideal for replacement.
Only Chicago valve plates have replaceable seats.
PERFECT BALANCE
Chicago Seals

CHICAGO SEAL CO.

20 NORTH WACKER DRIVE • CHICAGO 6, ILL.

SELF-SERVICE CASES *that stand up and sell!*

Stainless Steel Frozel All-Purpose Refrigerated Display Case

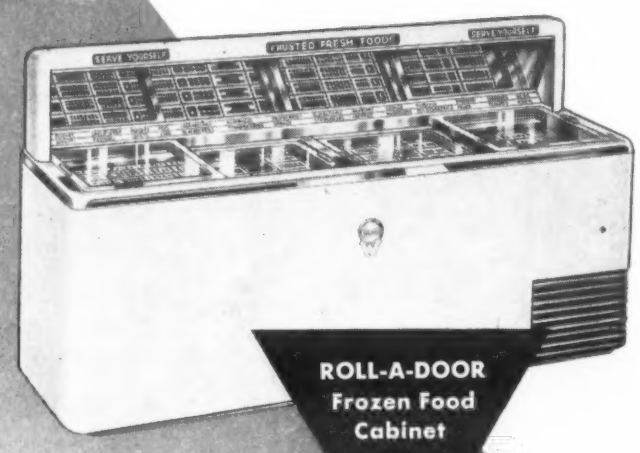


Frozel All-Purpose Refrigerated Display Case

WEBER REFRIGERATED CASES BUILT FOR HEAVY SALES SERVICE FILL EVERY SELF-SERVICE NEED

Self-service, now an accepted food merchandising method, requires proven dependable equipment to do a lasting selling job. The proven sales appealing design—the positive refrigeration protection—the complete visibility and accessibility that make sales soar with a Weber self-service case, are the result of years of research and experience in building refrigerated cases that *stand up and sell.*

Designed to sell food faster—with a larger profit on every sale—Weber Self-Service Cases sell more because the customer can see more. Attractive display—merchandise kept fresh and appealing—free and easy access to the customers—creates impulse sales that will make your profits soar.



ROLL-A-DOOR Frozen Food Cabinet

WEBER

WEBER Showcase & Fixture Co. Inc.

5700 Avalon Blvd., Los Angeles, Calif.

LOS ANGELES • EL PASO

Pioneers in Commercial Refrigeration Industry